

DOCUMENT DATA FORM

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Drawing book 18 - strap anchors

Include work order no. and floor no. if applicable

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KEYWORDS - HIGHLIGHT ALL THAT APPLY

Level 1

| | | | |
|-----------------------|--------------------------|---------------------------|------------|
| Bankers Trust | Project 4 | WTC 1 - North Tower | <u>Add</u> |
| Below Grade | Project 5 | WTC 2 - South Tower | |
| Concourse | Project 6 | WTC 3 - Marriot Hotel | |
| Electrical Substation | Project 7 | WTC 4 - South Plaza Bldg. | |
| Liberty Plaza | Project 8 | WTC 5 - North Plaza Bldg | |
| PATH Station | WFC 1 - Oppenheimer Dow | WTC 6 - Customs House | |
| PATH Terminal | WFC 2 - Tower B | WTC 7 | |
| Project 1 | WFC 3 - American Express | WTC Complex | |
| Project 2 | WFC 4 - Tower D | WTC Plaza | |
| Project 3 | | | |

Level 2

| | | | |
|--------------------------|-----------------|----------------------------|--------------------|
| Accident analysis & risk | Fire protection | Misc. Performance Problems | <u>Structural</u> |
| Architectural | Fire service | News coverage | Tenant alterations |
| Data request | Landscaping | Police | Tenant Space |
| Emergency management | Management | Security | <u>Add</u> |
| Evacuation | Mech./elec. | | |

Level 3

| | | | | |
|-----------------------|----------------------|--------------------------|-------------------|----------------|
| 1993 explosion | Cranes | Frame | Roof | Weight |
| A/E fitout | Criteria | Frame analysis | Safety | Weld detail |
| A-242 | Dampers | Frequency | Schedule | Weld size |
| A-36 | Debris | Fuel | Sculpture | Welding |
| A-497 | Deck | Furniture layout | Security system | Wind |
| Aircraft Impact | Deflection | Generators | Shear knuckle | Windows |
| Air cooled condensers | Demolition | Guidelines | Shear test | Yield strength |
| Analysis | Design | Gypsum board | Shear Stud | <u>Add</u> |
| Angles | <u>Detailing</u> | Hat truss | Shop drawings | |
| Antenna | Doors | Human comfort | Shortening | |
| Artifacts | Drawings | HVAC | Slab | |
| Asbestos | Eastern States Steel | Index | Slurry wall | |
| Base plate | Egress | Inspection | Smoke control | |
| Beams | Elevator | Insulation | Smoke test | |
| Bid documents | Elevator Shaft | Job number | Spandrel beam | |
| Bid Invitation | Emergency | Joist | Specifications | |
| Bow tie | communications | L-50 | Splices | |
| Bracing | Equipment | Lighting | Sprinkler | |
| Bridging truss | Erection marks | Loads | Stability | |
| Building code | Errors & Omissions | Maintenance | Stairways | |
| Calculations | Escalator | Marking | Standards | |
| Carpet | Expansion joint | Mesh reinforcement | Steel | |
| Ceilings | Exterior columns | Mill inspection | Steel composition | |
| Certification | Fabrication | Model | Stiffness | |
| Chillers | Family member | Mullion | Structural review | |
| Cladding | Field survey | Operations | Surveillance | |
| Collapse | Fire alarms | Paint | Survey | |
| Columns | Fireproofing | Partition layout | Survivor | |
| Communication systems | Fire spread | Partitions | Tenant list | |
| Composite truss | Fire testing | Photos | Tenant occupancy | |
| Computer output | Firetower | Pipes | Testing | |
| Computer program | Flag Pole | Plumbing | Tie | |
| Concrete | Flammability | Prestressing | Tolerances | |
| Connections | Floor | Probability, uncertainty | Transfer Girders | |
| Construction | Floor load | Quality control | Triad | |
| Contract | Floor slab | Ramp | Truss | |
| Core beams | Floor system | Reinforcing | Vestibule | |
| Core columns | Floor trusses | (strengthening) | Vibration | |
| Corrosion | Formwork | Renovation | Walls | |
| Cracking | Foundations | Repair | Water supply | |
| | Fracture | Research & Development | Weather | |

drawing books

strap anchors

BOOK 19

ANCHOR STRAPS
FOUNDATION DETAIL

SKILLI, J, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - INDEX & GENERAL NOTES

DATE 10/ 1/69

REVISIONS

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1. DETAIL INDICATED 50A IS DETAIL 50A SHOWN ON DRAWING 8-AB2-50, DETAIL INDICATED 8.1 IS DETAIL 8.1 SHOWN ON DRAWING 8-AB2-8.



18-AB1- 1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

ANCHOR DETAILS - EXTERIOR WALL - INDEX

DATE

11/ 7/69

REVISIONS

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18-AB4- 1

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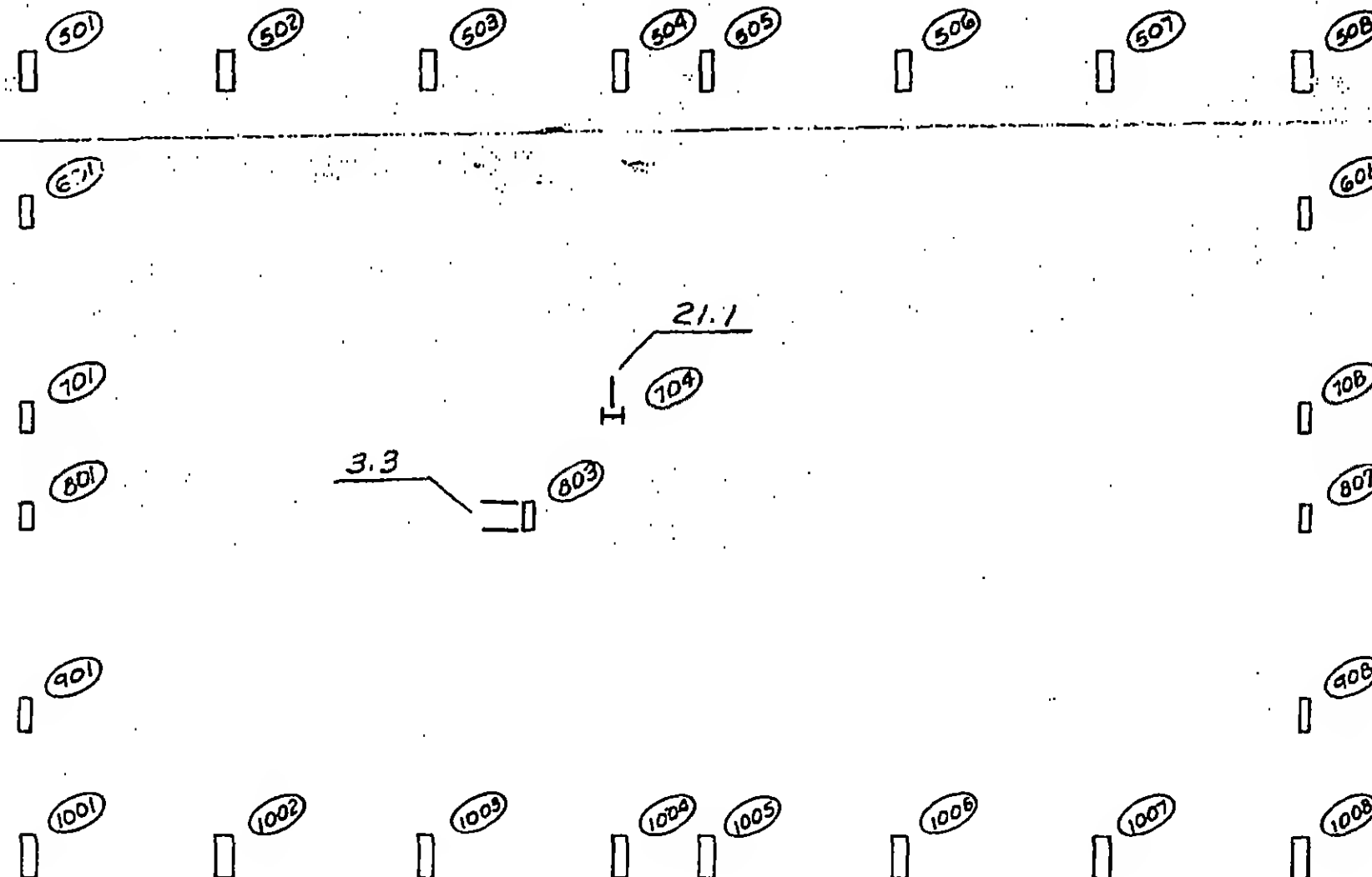
PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR STRAPS-KEY PLAN-ELEV. 242 -TOWER A

DATE 10/30/68

REVISIONS

NORTH



DESIGNED
H. P. H. 00
DRAWN
S. Wexler
REVIEWED

18-A1-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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TITLE STRAP ANCHORS - KEY PLAN - ELEV. 264 - TOWER A

DATE 10/30/68

REVISIONS

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51A

501

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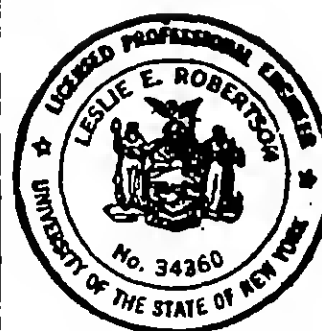
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1006

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DESIGNED

DRAWN

S. Wexler

REVIEWED

1B-A1-3

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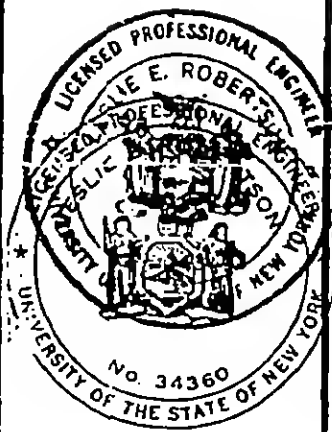
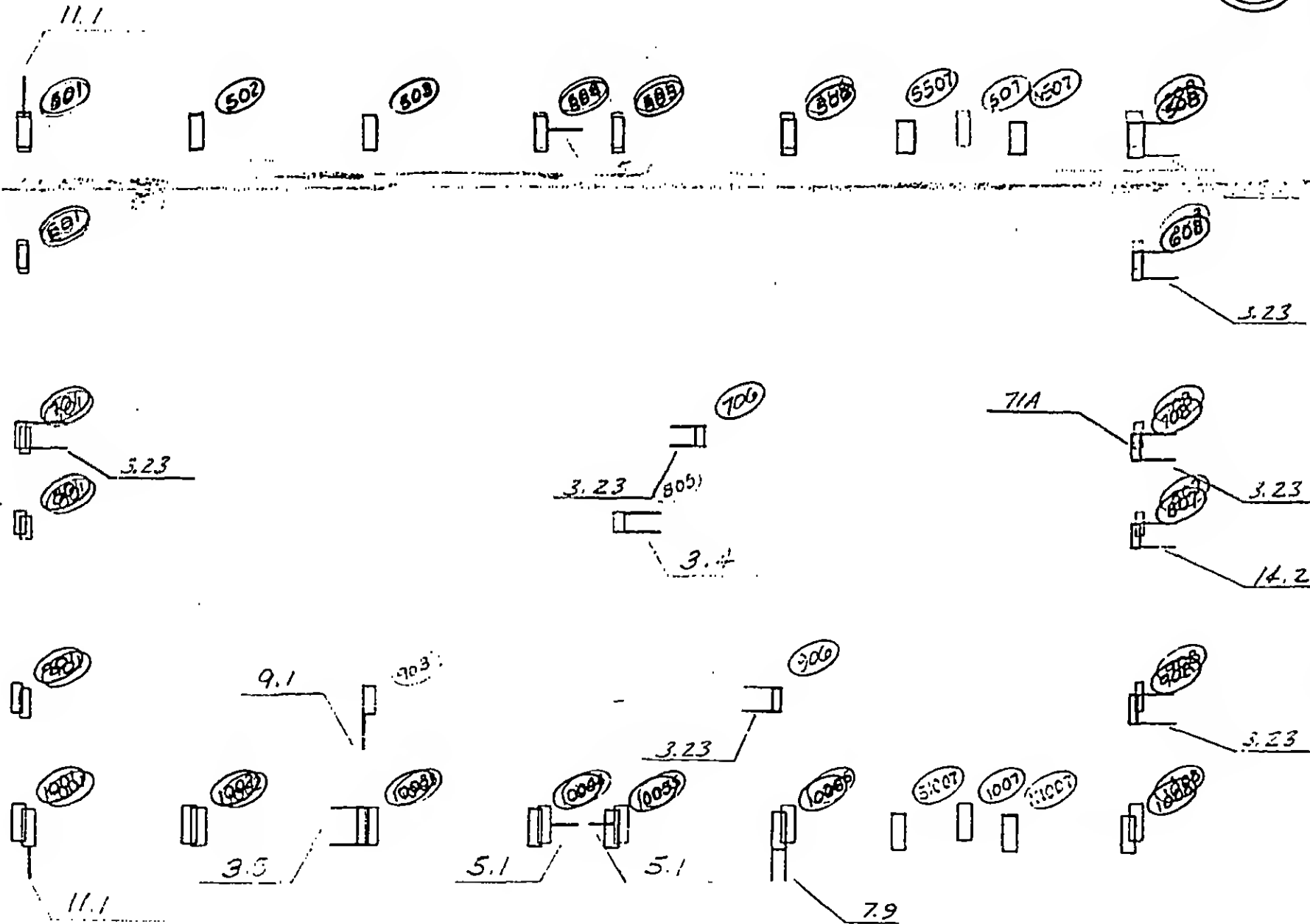
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TITLE STRAFTANDERSONSKREYPLAN - ELEV. 264 - TOWER '3'

DATE 8/28/69

REVISIONS



DESIGNED
BY E. E. ROBERT
CHECKED
BY W. J. BAKER
REVIEWED
BY W. J. BAKER

1/8-31-3.1

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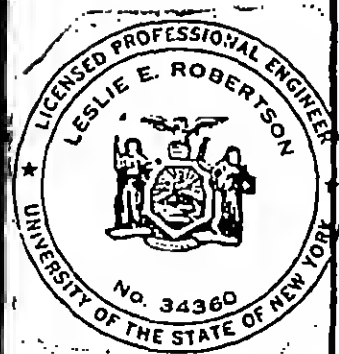
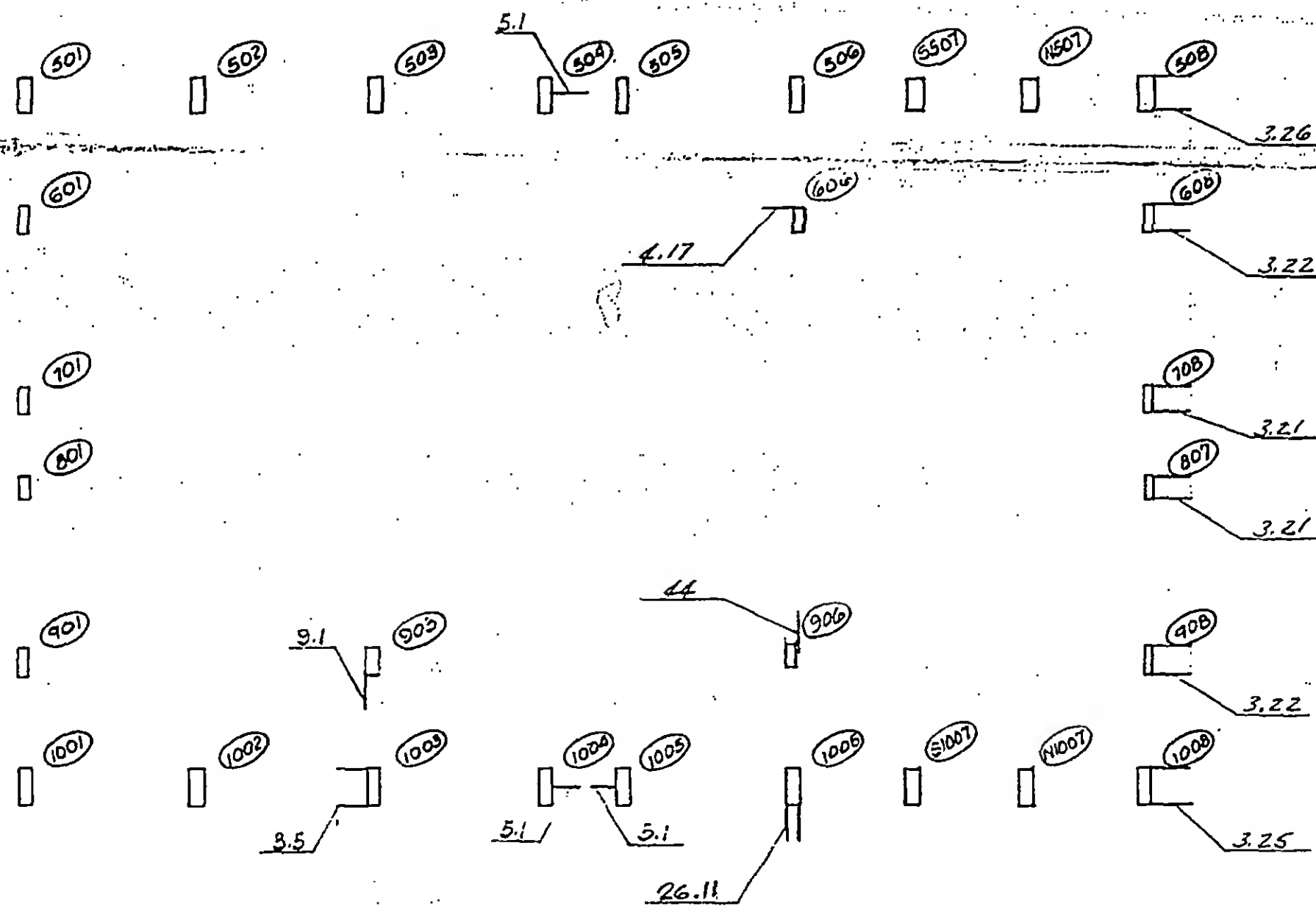
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TITLE STRAP ANCHORS-KEY PLAN-ELEV. 274-TOWER 'B'

DATE 5-20-69

REVISIONS



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S.T.M.

REVIEWED

C.D. Brewer

18-B1-4.1

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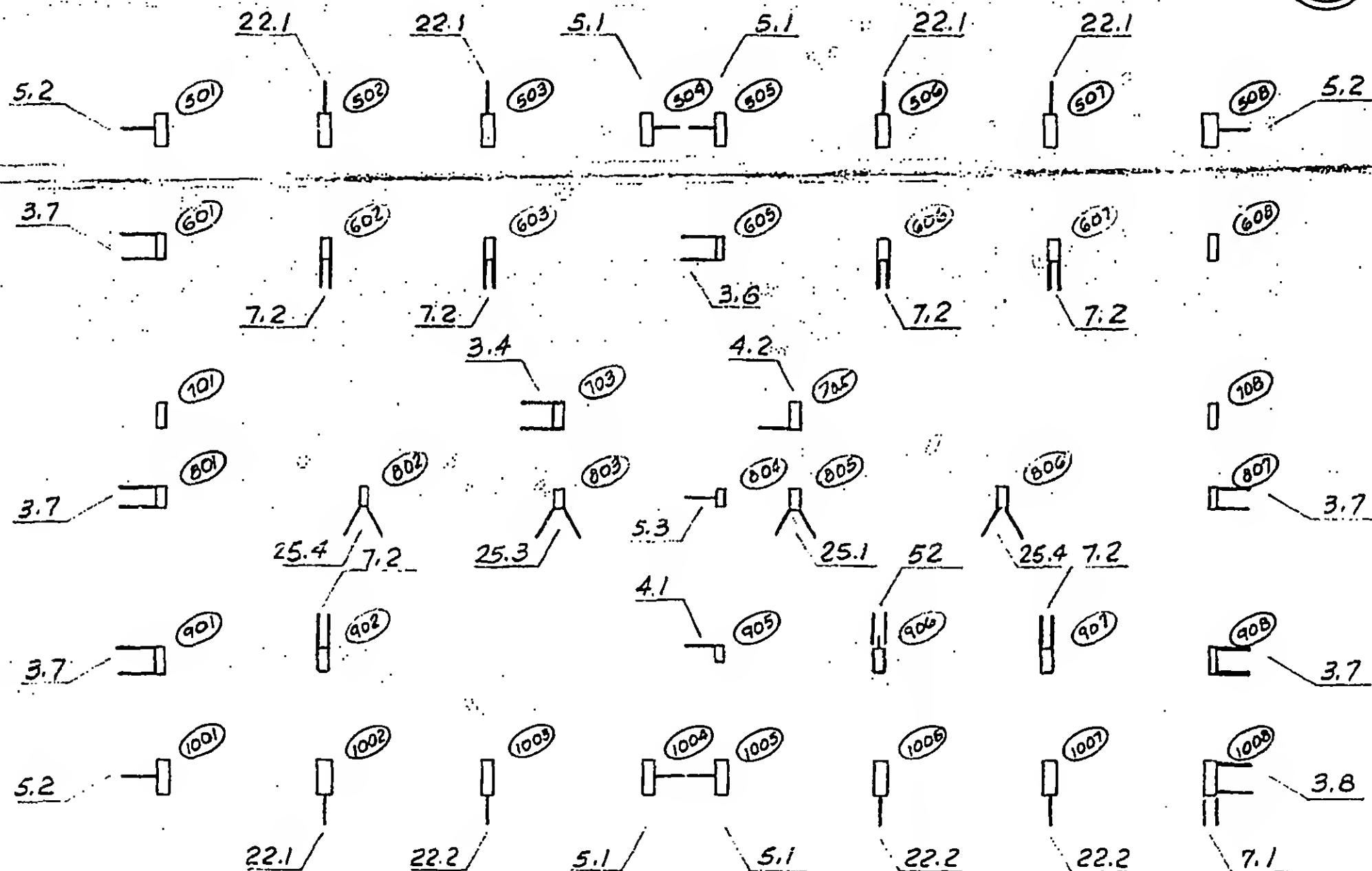
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TITLE STRAP ANCHORS-KEY PLAN-EL 284-TOWER A

DATE 10-30-68

REVISIONS

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DRAWN

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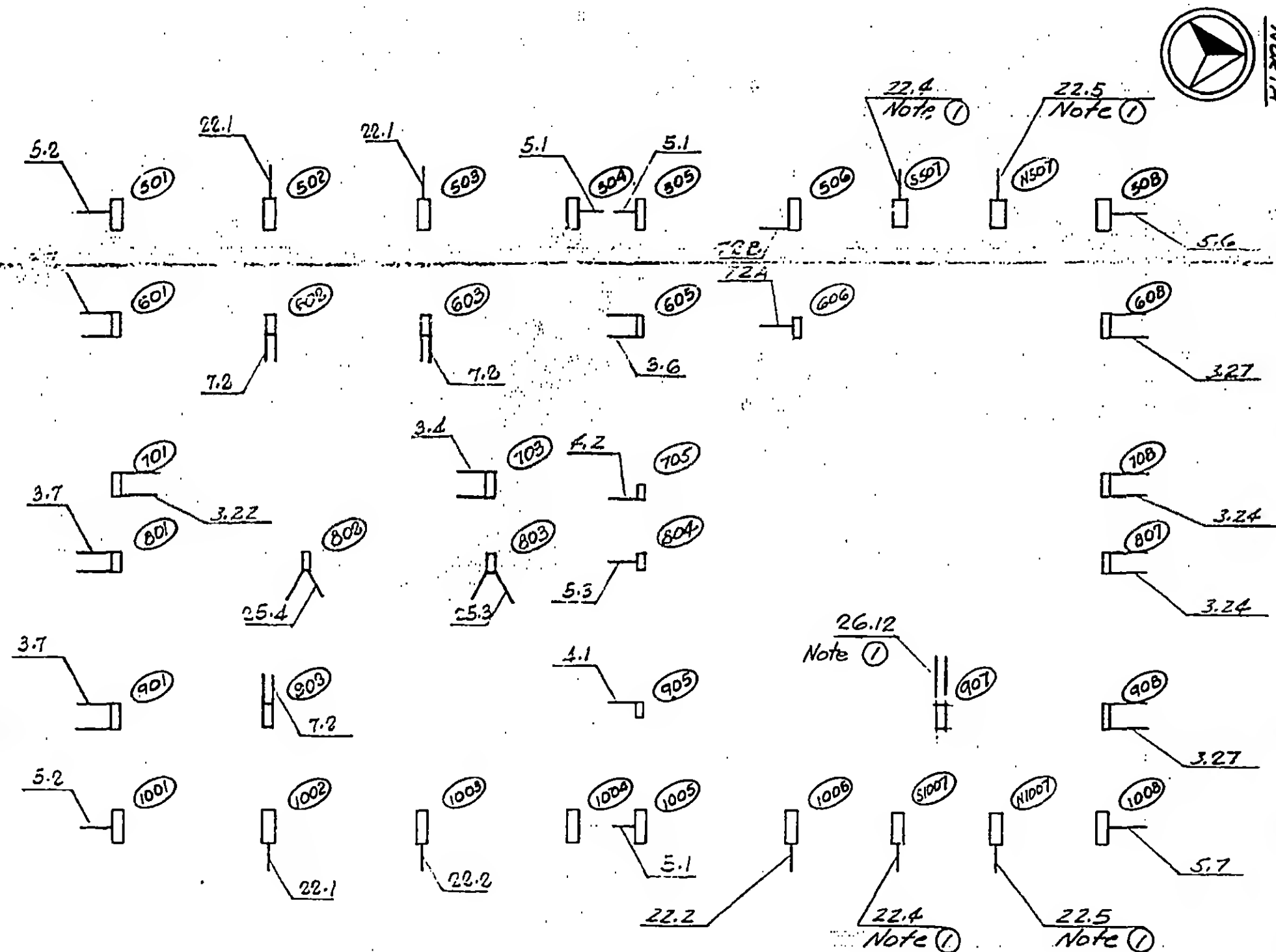
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TITLE STRAP ANCHORS - KEY PLAN - ELEV. 284 - TOWER 'B'

DATE 5-20-69

REVISIONS



Note ①: Install after removal of existing PATH tube.



DESIGNED

DRAWN

S.T.M.

REVIEWED

W. Brewer

18-B1-5.1

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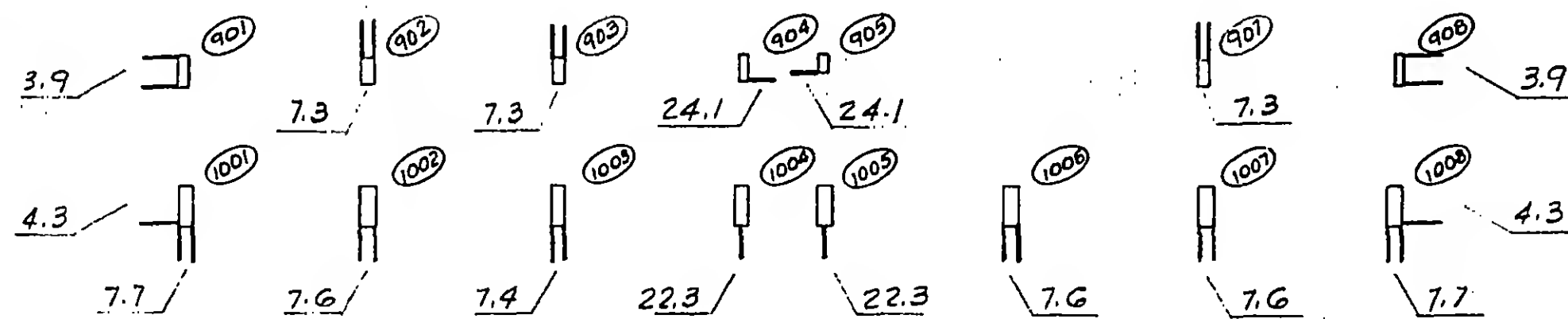
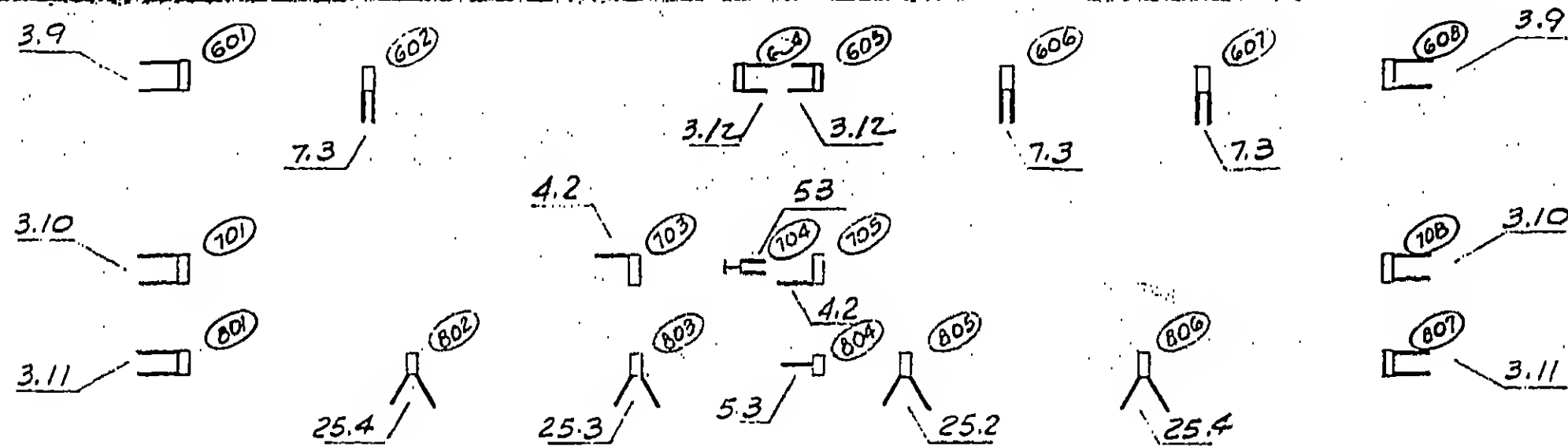
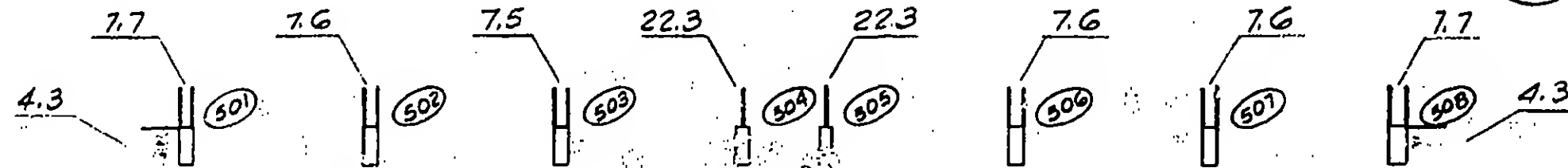
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TITLE STRAP ANCHORS - KEY PLAN - EL 294 - TOWER A

DATE 10/30/68

REVISIONS

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✓ O'Neill
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S. Wexler
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18-A1-6

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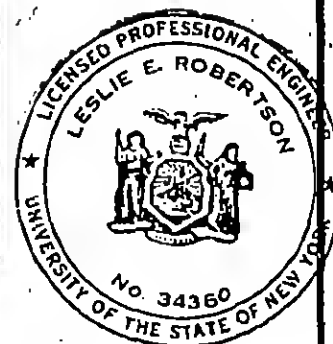
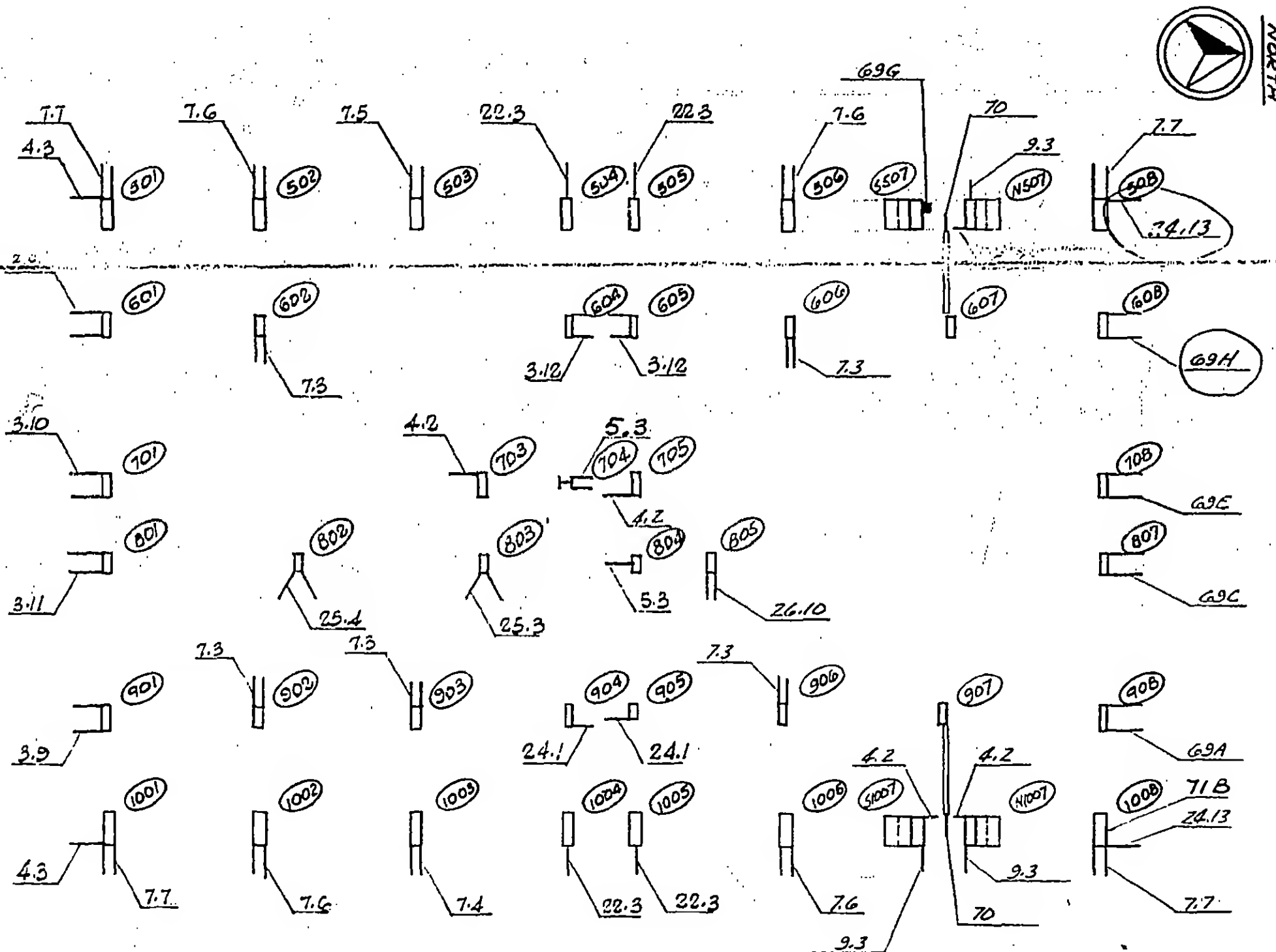
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TITLE STRAP ANCHORS - KEY PLAN - ELEV. 294 - TOWER 'B'

DATE 5-20-69

REVISIONS

10-1-69



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S.T.M.

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W. Brewer

18-81-6.1

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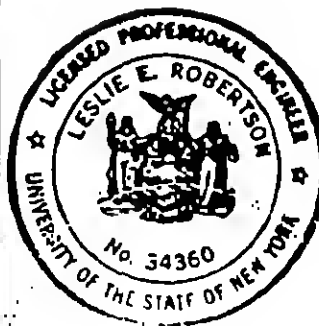
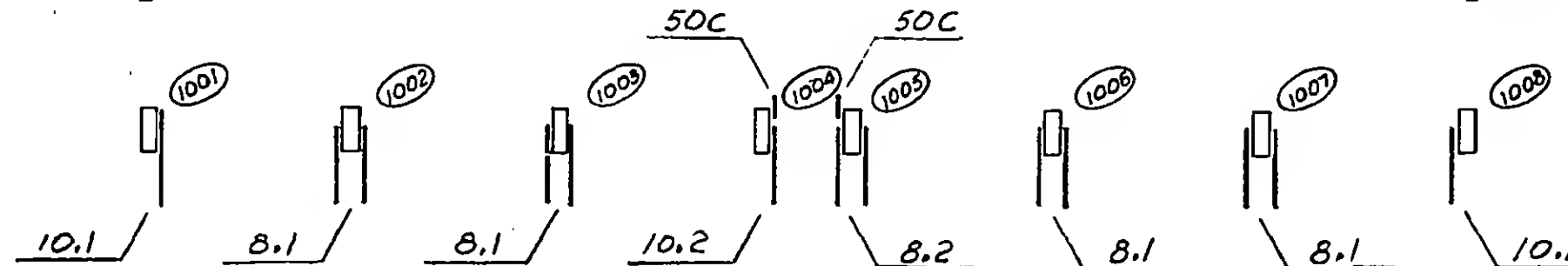
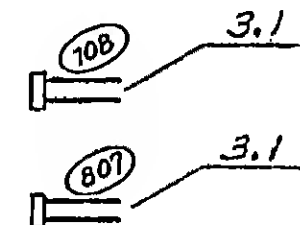
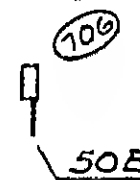
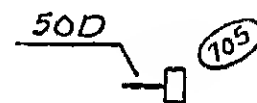
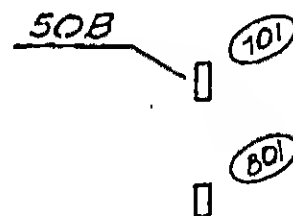
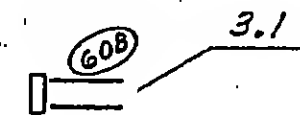
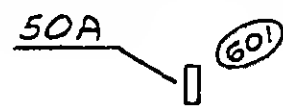
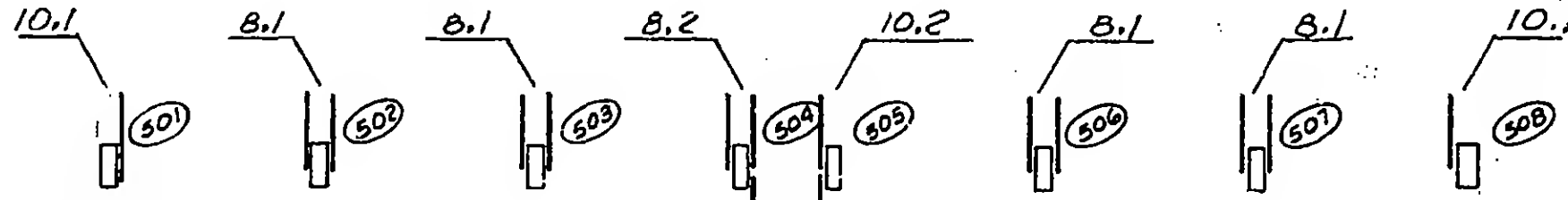
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TITLE ANCHOR STRAPS - KEY PLAN - FLOOR 1 - TOWER A

DATE 10-16-68

REVISIONS

NORTH



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W. G. Hall

DRAWN

S. Wexler

REVIEWED

W. Brewster

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Structural & Civil Engineers

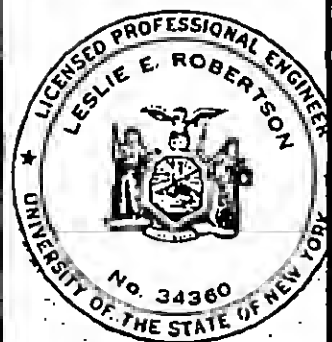
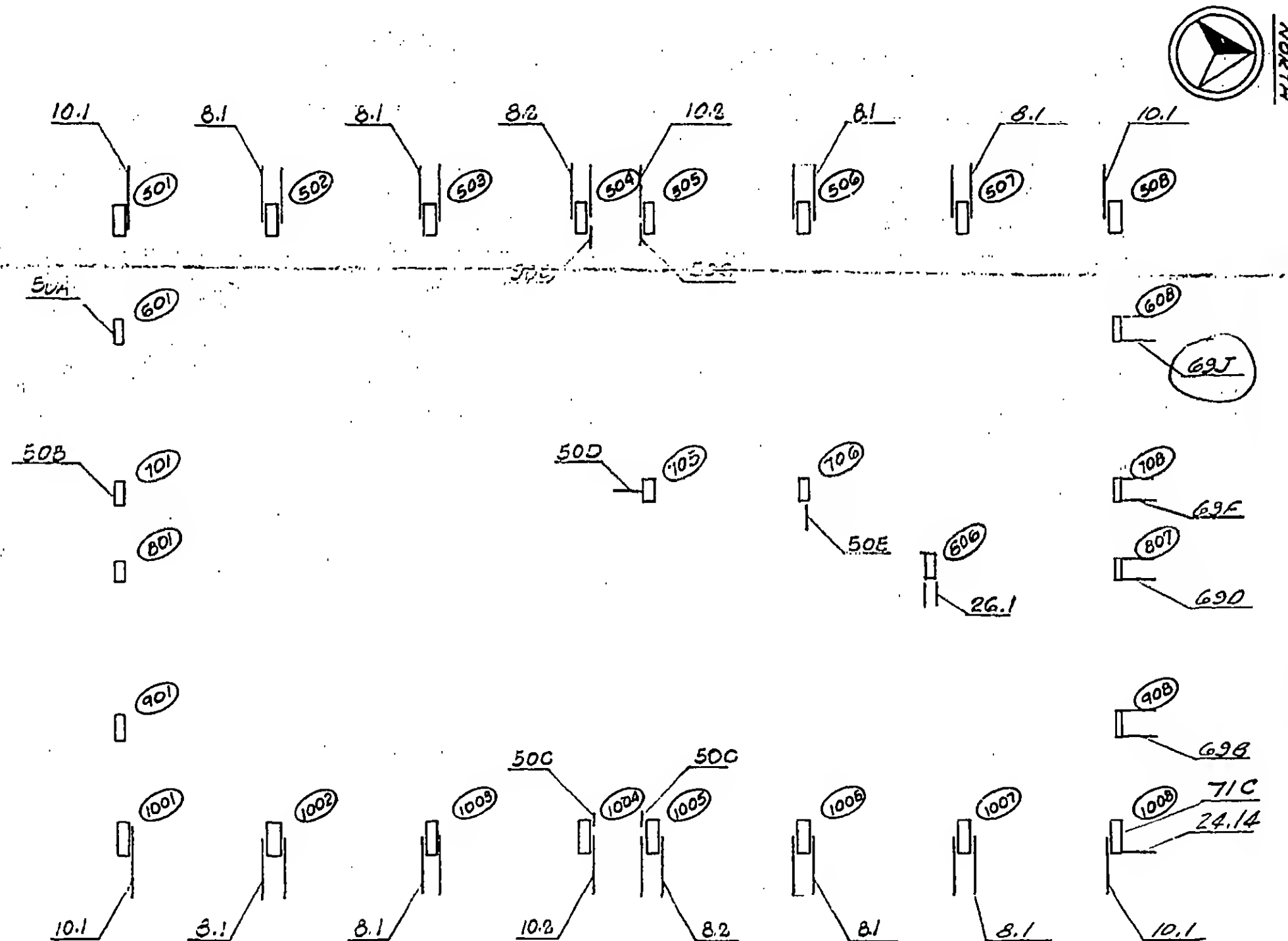
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TITLE ANCHOR STRAPS- KEY PLAN - FLOOR 1- TOWER 2

DATE 5-20-69

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10-1-69



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S.T.M.

REVIEWED

W. Brewer

18-B1-7.1

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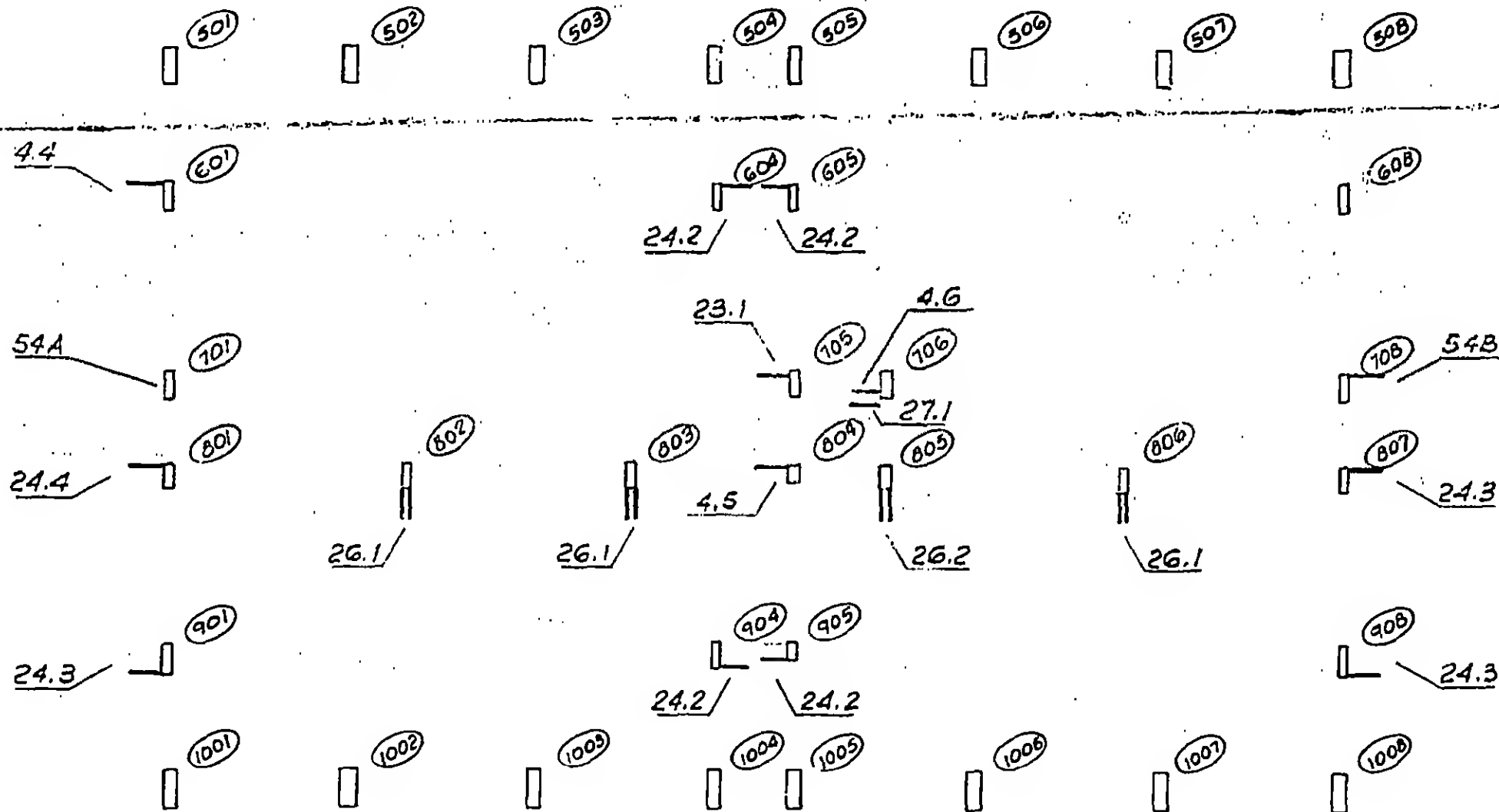
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DATE 12-13-68

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L. E. Robertson

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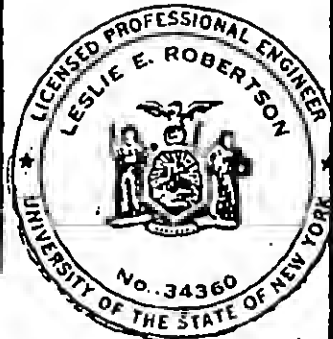
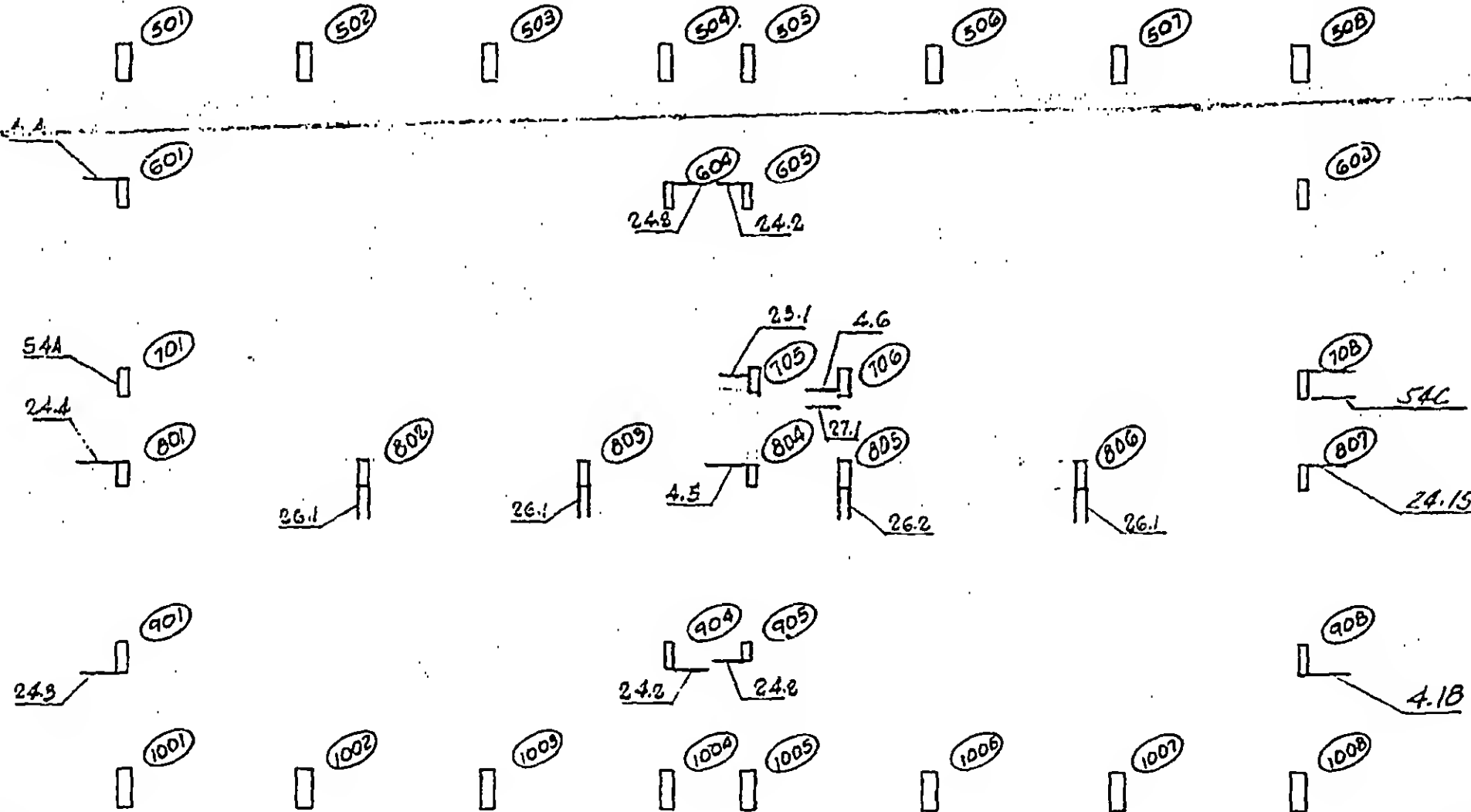
TITLE STRAP ANCHORS-KEY PLAN-FLOOR 2-TOWER B

DATE 5-20-69

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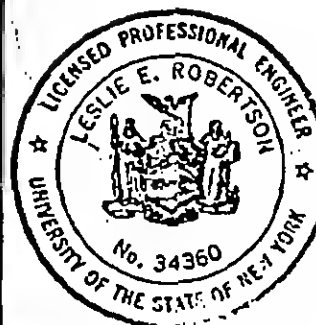
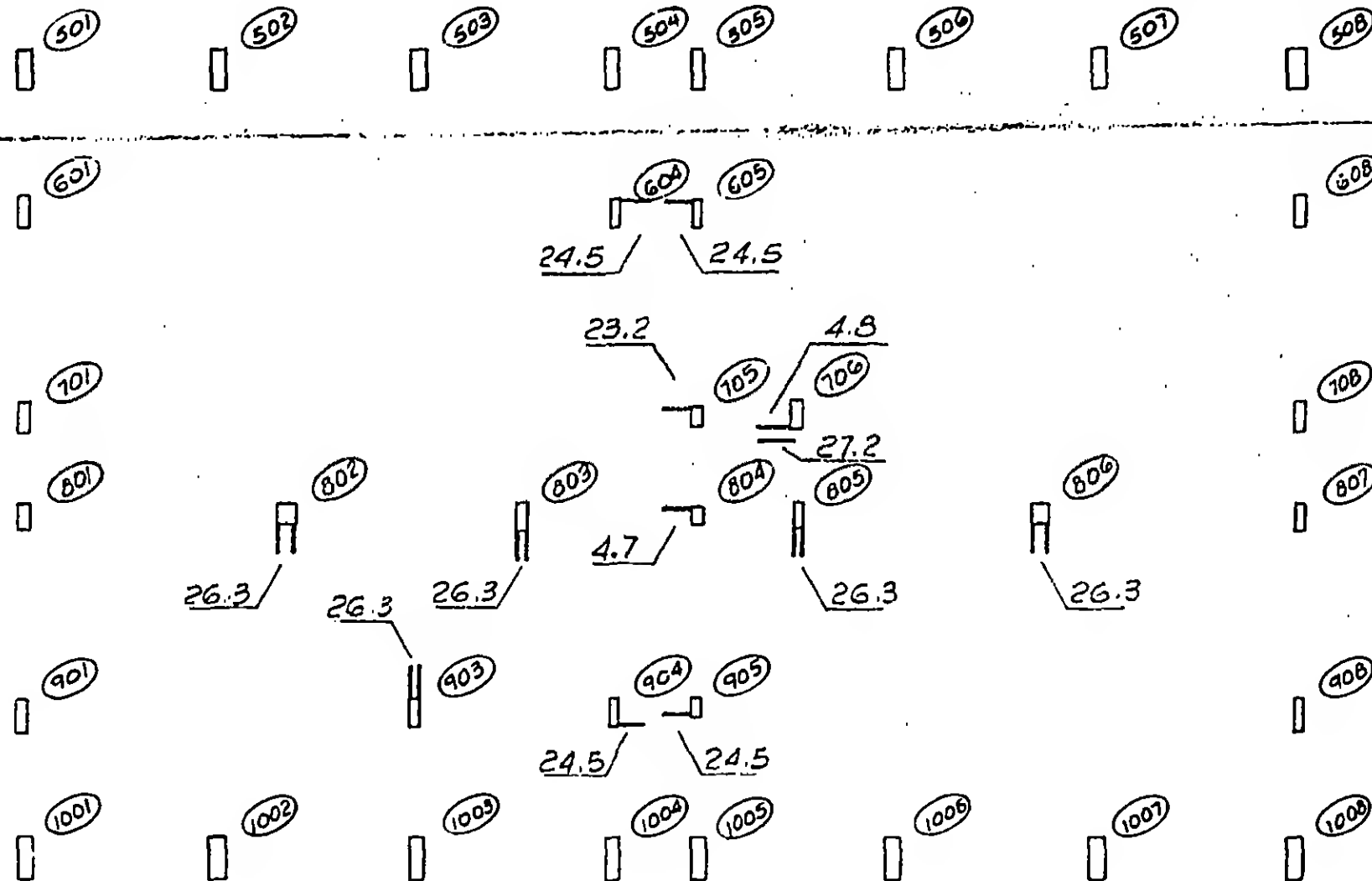
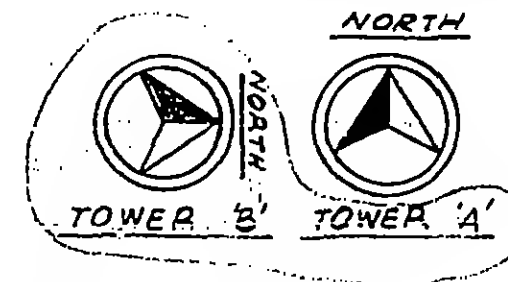
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TITLE STRAP ANCHORS - KEY PLANS - FLOOR 3

DATE 12-13-68

REVISIONS

5-20-69



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S. Wexler

DRAWN

S. Wexler

REVIEWED

(J. Brewer)

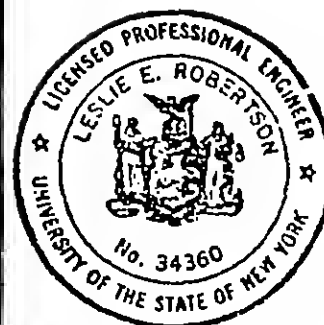
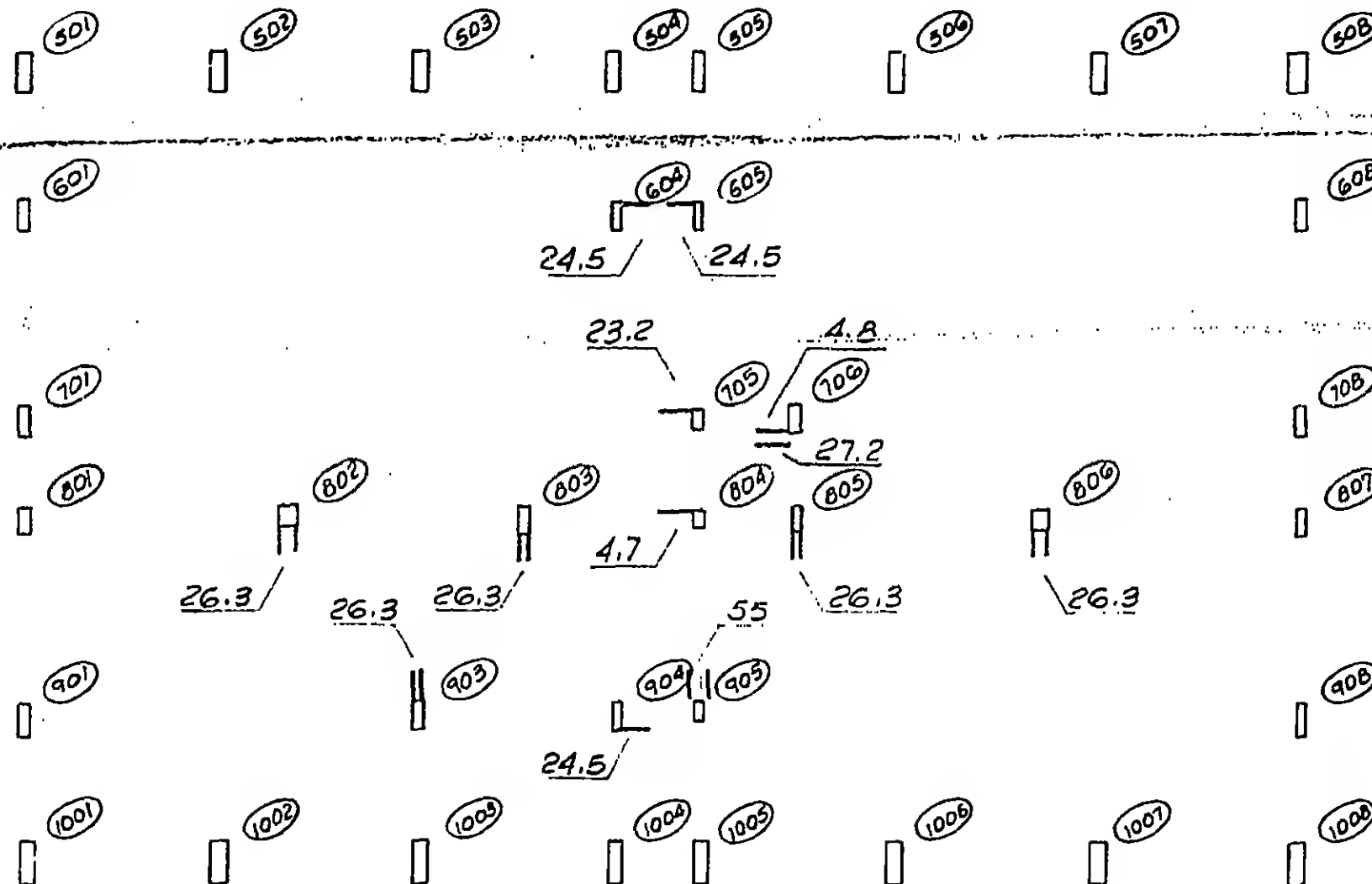
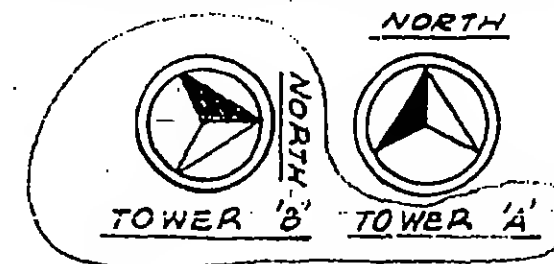
18-AB1-9

Structural & Civil Engineers

TITLE STRAP ANCHORS -KEY PLANS -FLOOR 4

DATE 12-13-68

5-20-69



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J. B. C.

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S. Wexler

REVIEWED
W. Brewer

78-AB1-10

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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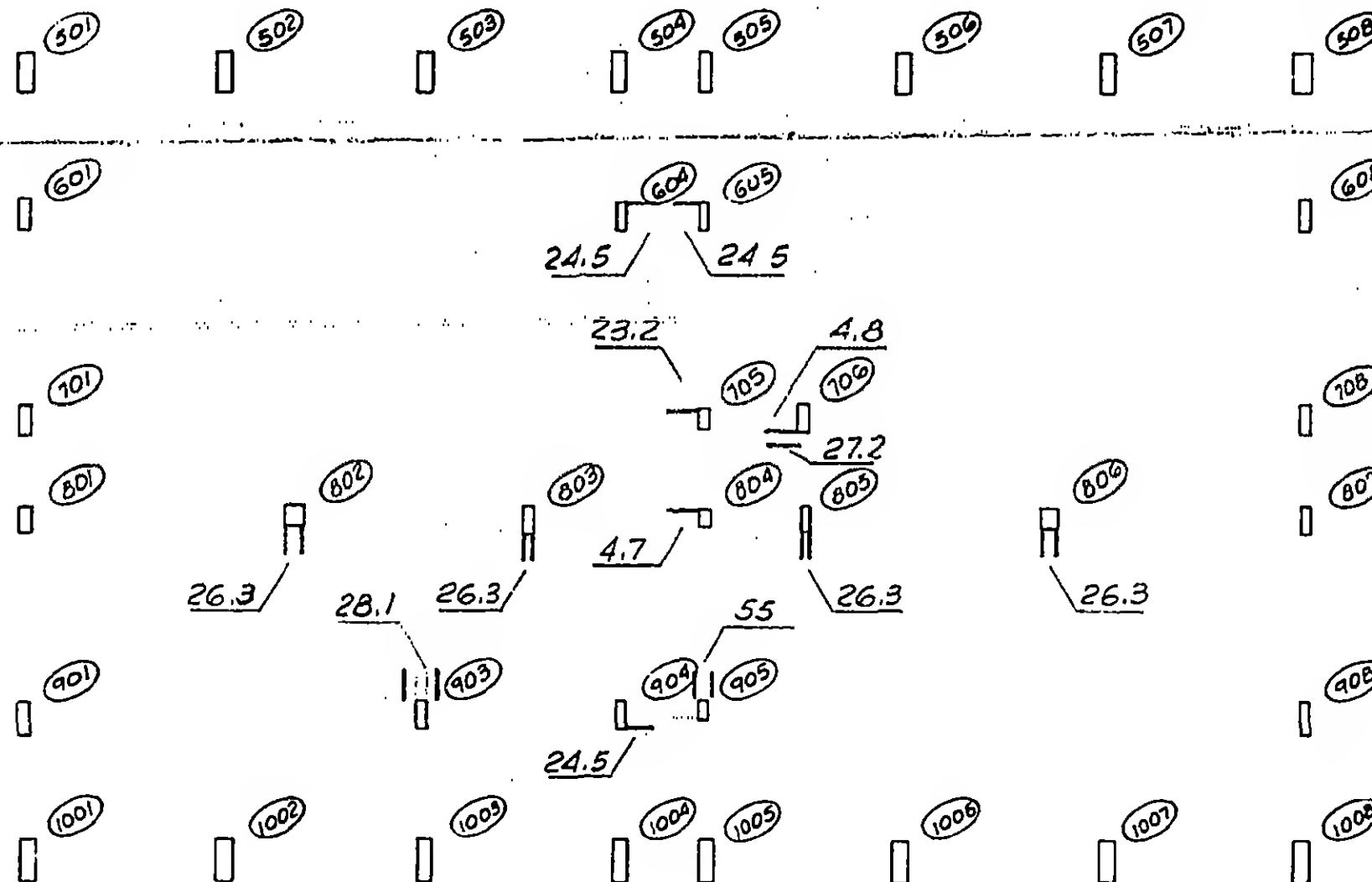
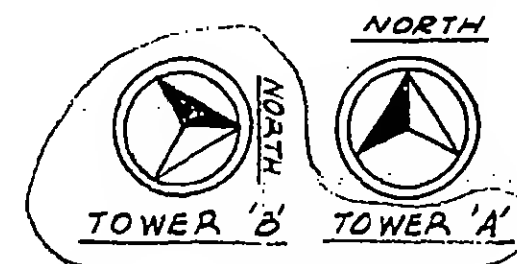
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TITLE STRAP ANCHORS - KEY PLANS - FLOOR 5

DATE 12-13-68

REVISIONS

5-20-69



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L. E. Robertson

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S. Wexler

REVIEWED
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18-AB1-11

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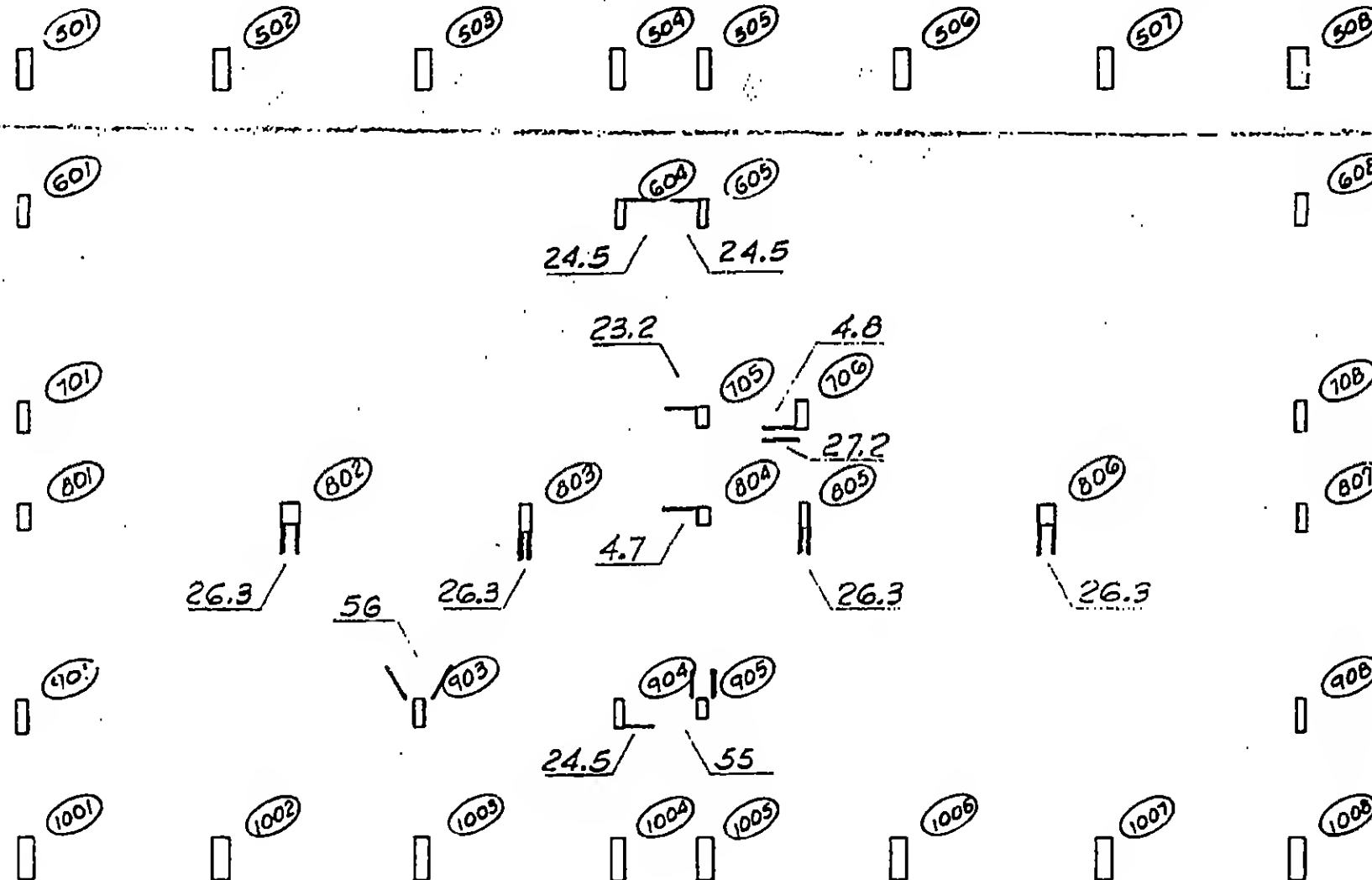
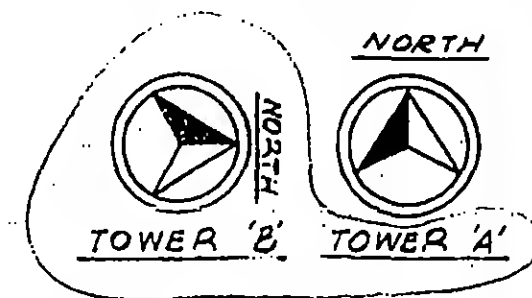
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TITLE STRAP ANCHORS - KEY PLANS - FLOOR 6.

DATE 12-13-68

REVISIONS

5-20-69



DESIGNED L. O'Neil

DRAWN S. Wexler

REVIEWED W. Brewer

18-AB-12

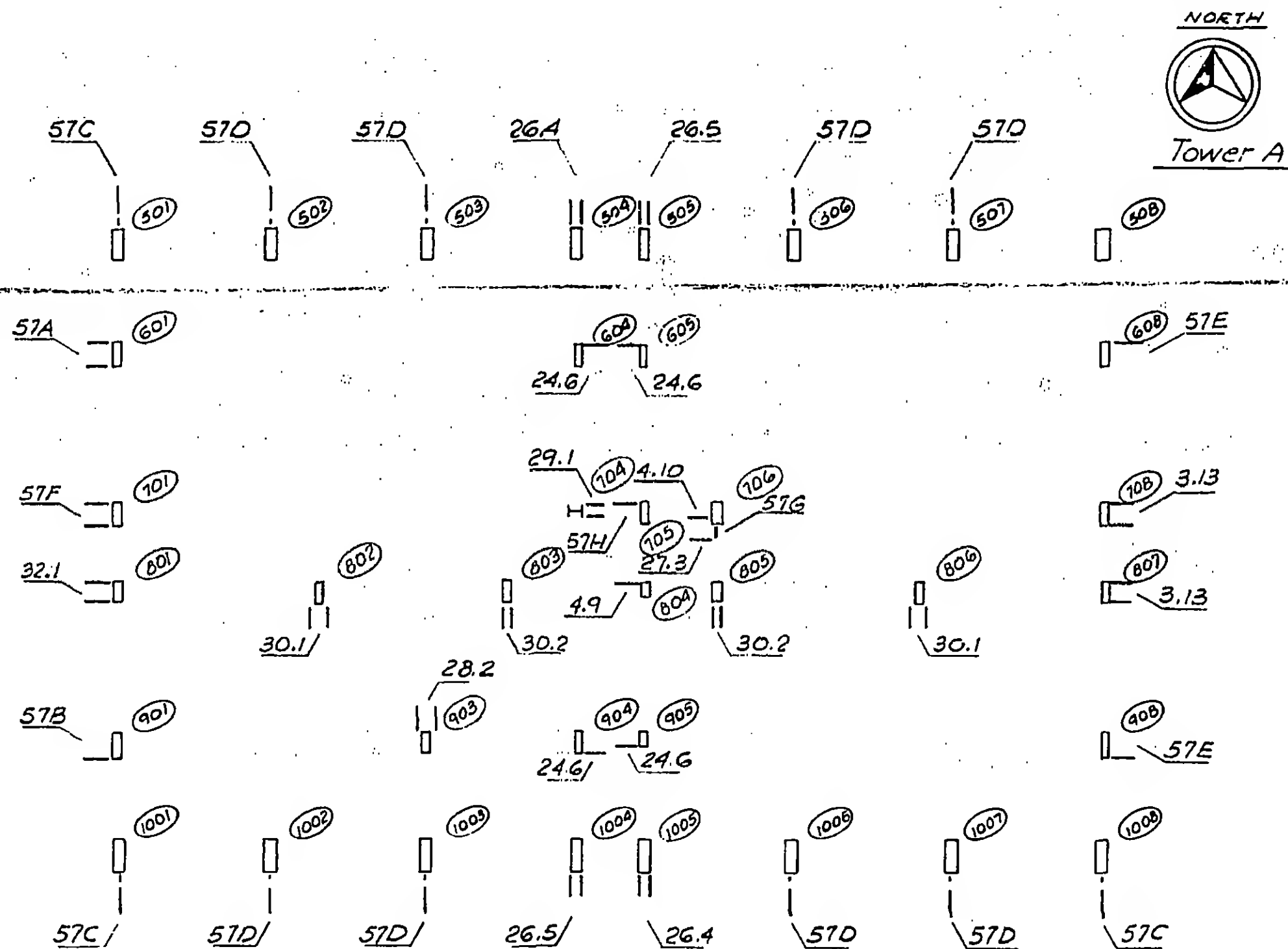
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PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR STRAPS - KEY PLAN - FLOOR 7 - TOWER A

DATE 12-13-68

REVISIONS



DESIGNED
J. D. M. C.
DRAWN
S. Wexler.
REVIEWED

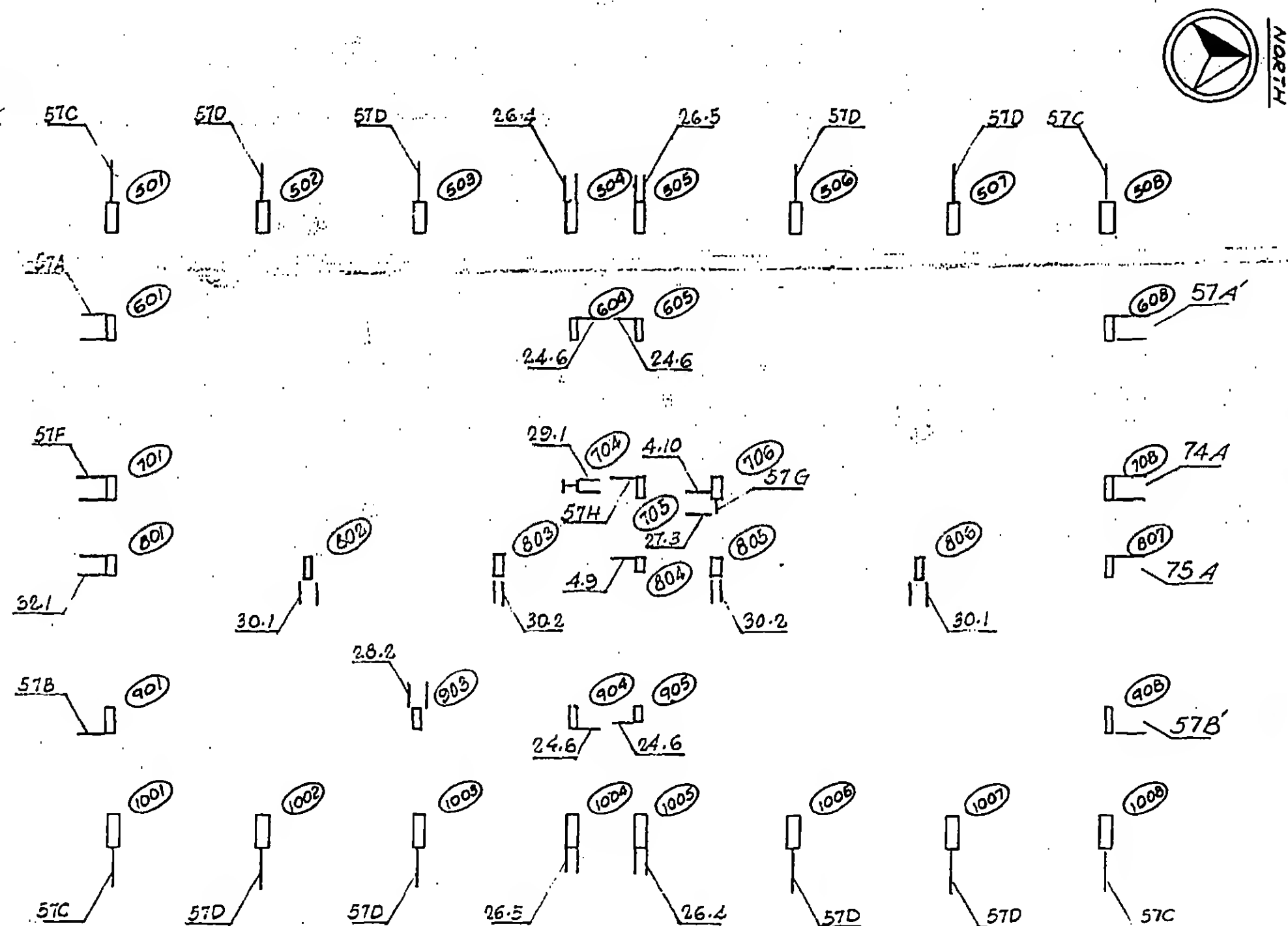
18-A1-13

Structural & Civil Engineers

TITLE ANCHOR STRAPS - KEY PLAN - FLOOR 7 - TOWER 3

DATE 10-1-69

REVISIONS



DESIGNED

DRAWN

S.T.M:

REVIEWS

18-B1-13.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

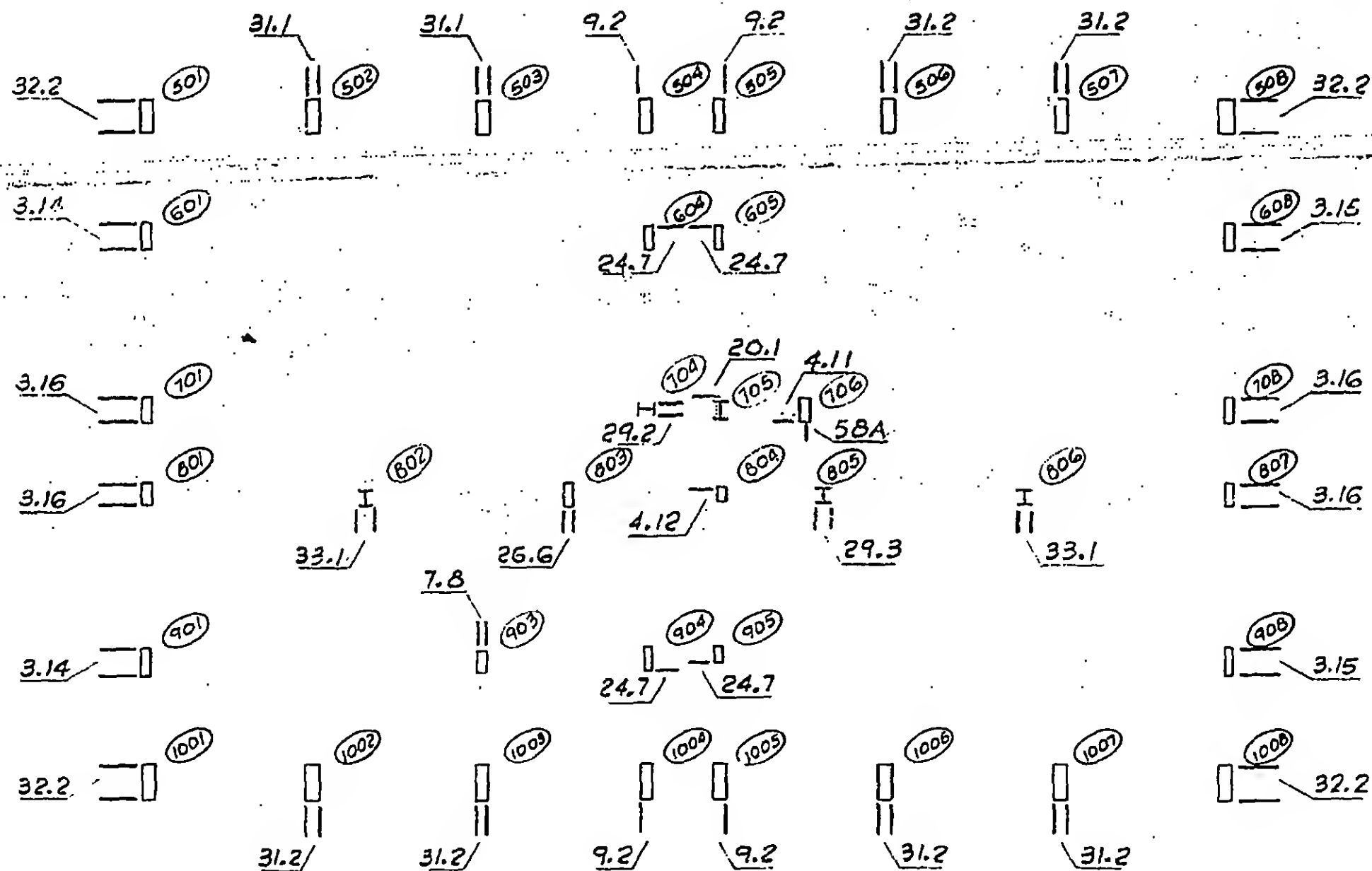
PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS-KEY PLAN-FLOOR 9-TOWER A

DATE 12-13-68

REVISIONS

NORTH



DESIGNED

S. Wexler

DRAWN

S. Wexler

REVIEWED

18-A1-14

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

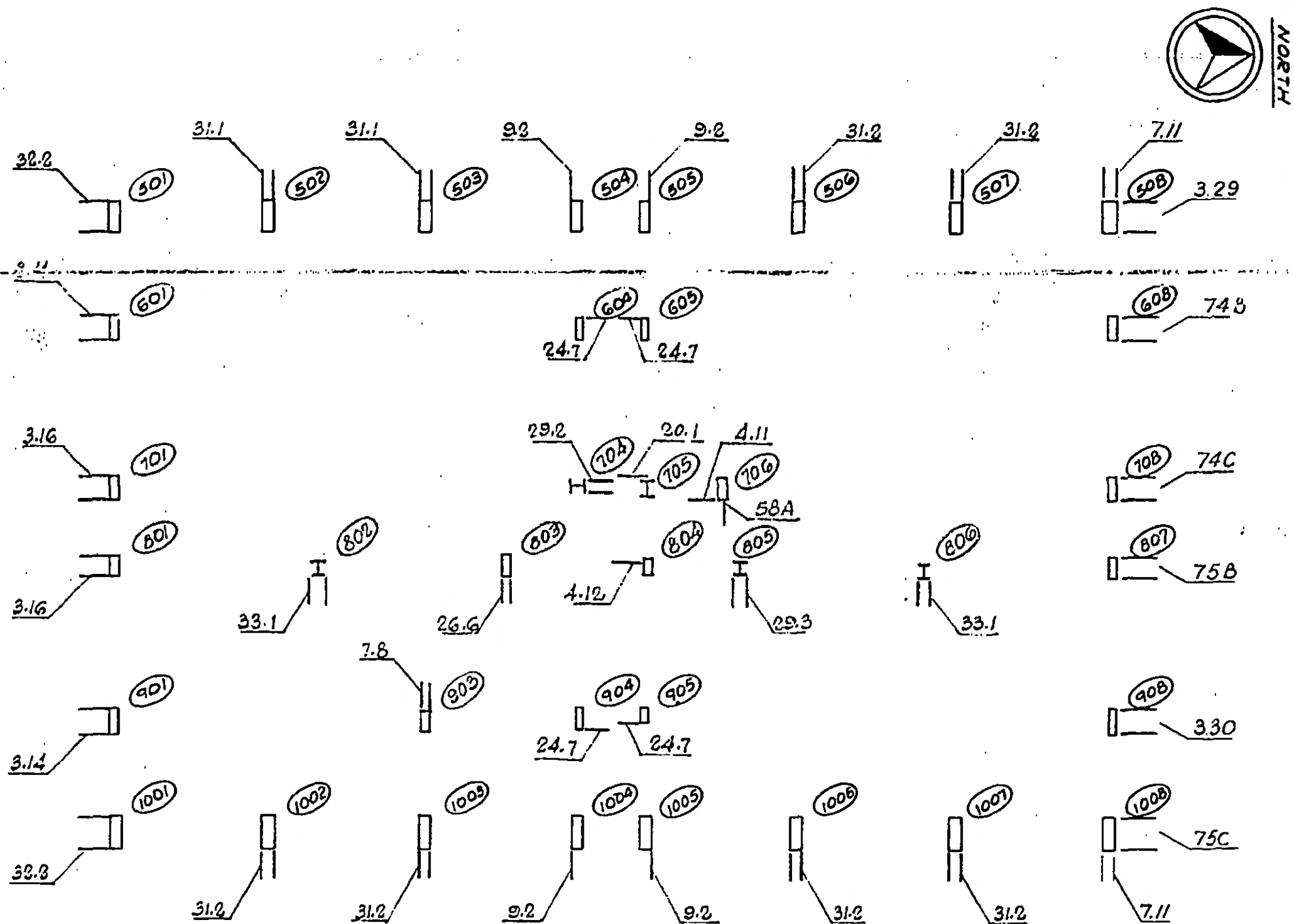
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS-KEY PLAN-FLOOR 9-TOWER B

DATE 10-1-69

REVISIONS



DESIGNED

DRAWN

S.T.M.

REVIEWED

18-31-14.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOORS 10, 11

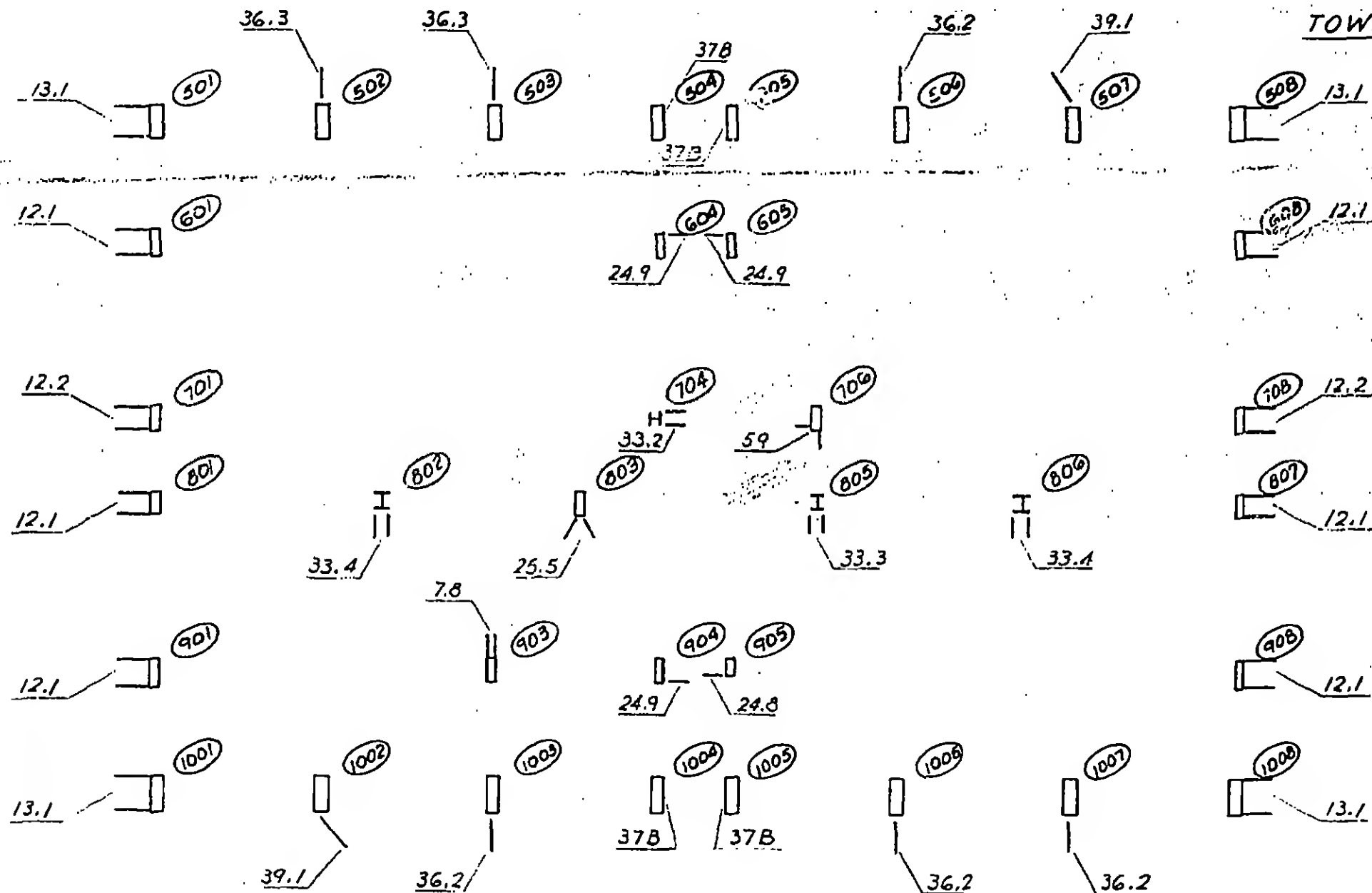
DATE 2-7-69

REVISIONS

NORTH



TOWER A



DESIGNED
F. Smith
DRAWN
F. Smith
REVIEWED
W. Brewer

16 - A1 - 15.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

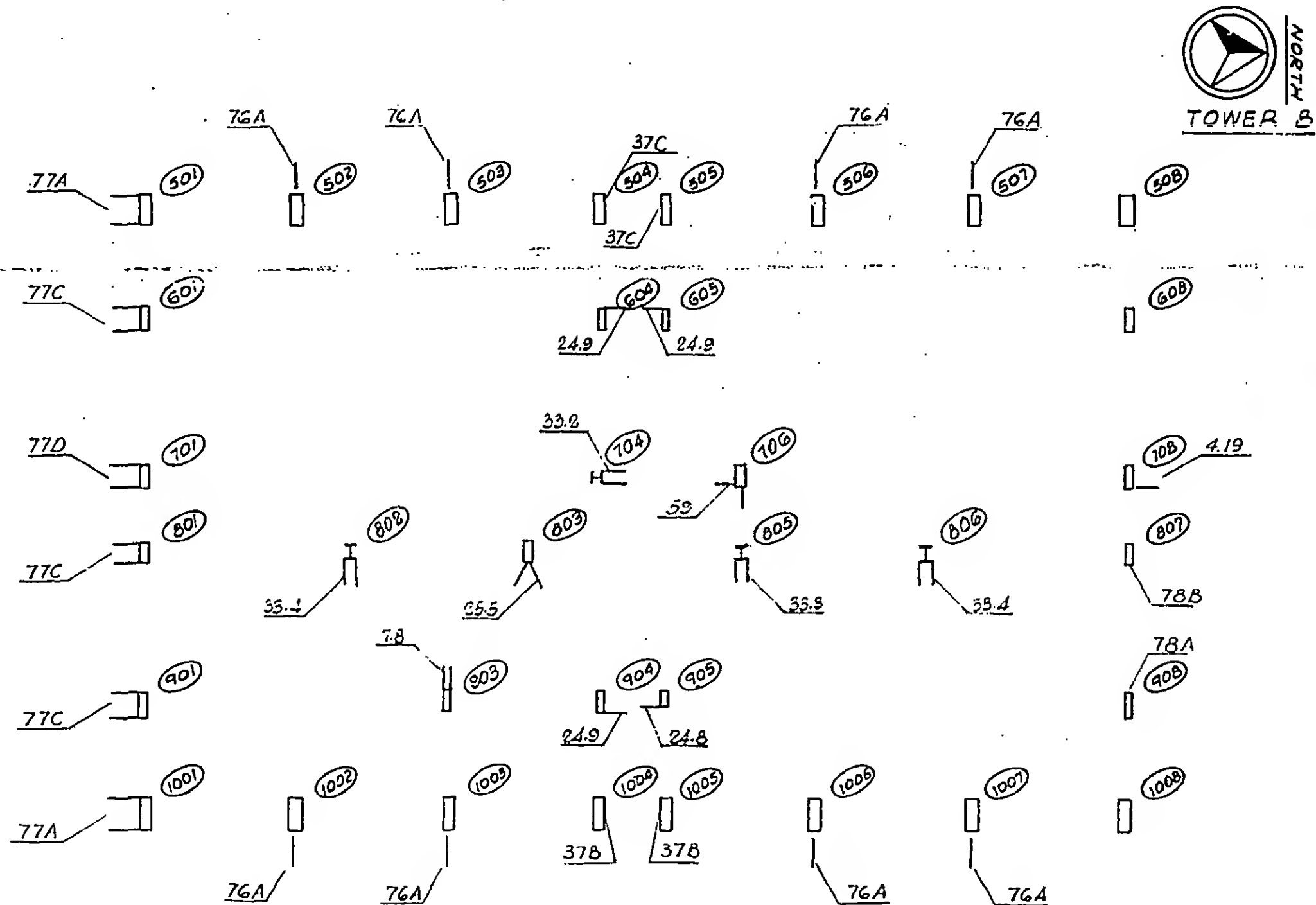
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 10

DATE 10-1-69

REVISIONS



DESIGNED

DRAWN

S.T.M.

REVIEWED

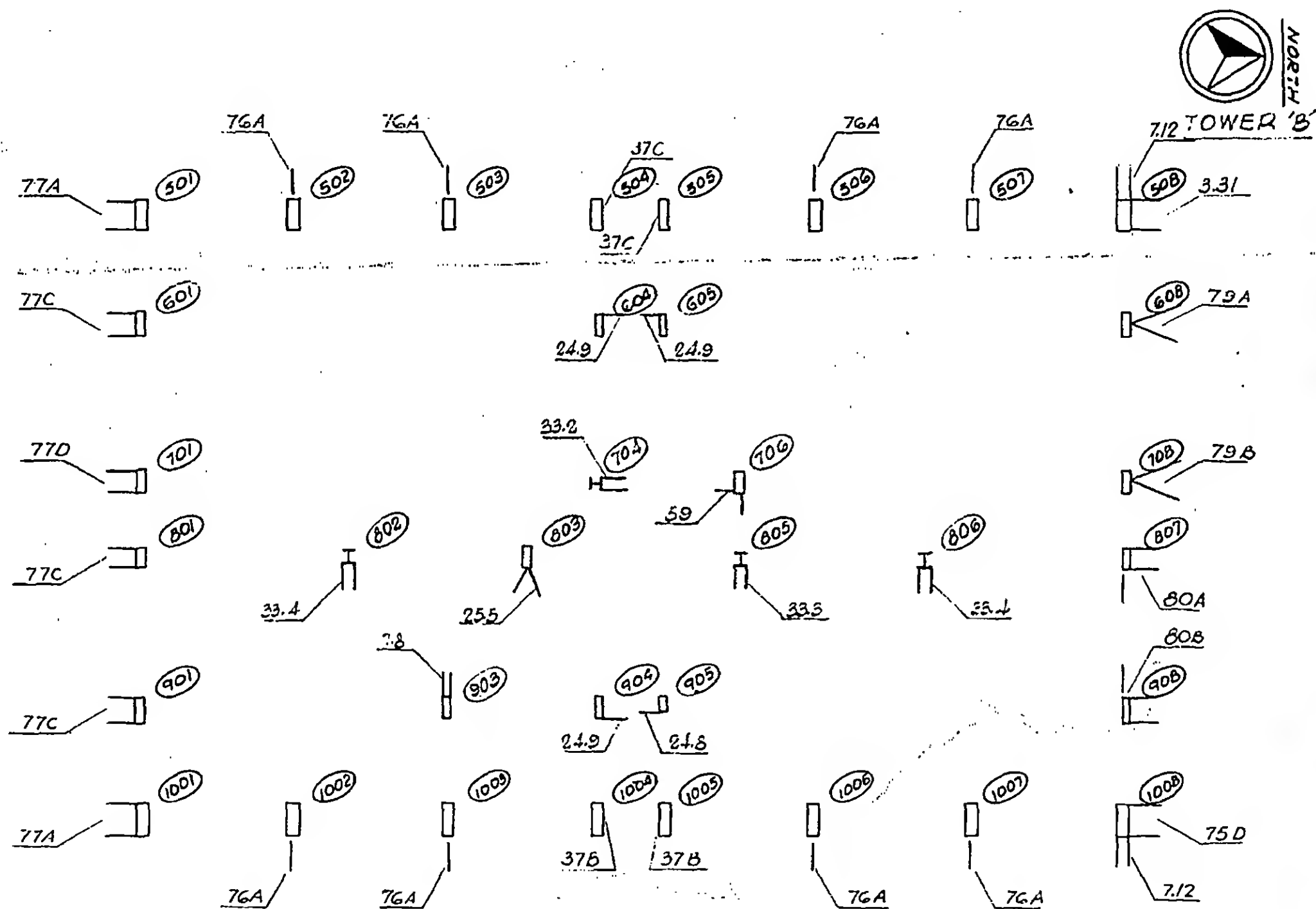
18-31-15.2

Structural & Civil Engineers

TITLE: STRAP ANCHORS-KEY PLANS- FLOOR II

DATE 10-1-69

REVISIONS



DESIGNED

DRAWN

S.T.M.

REVIEWED

18-51-15.3

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

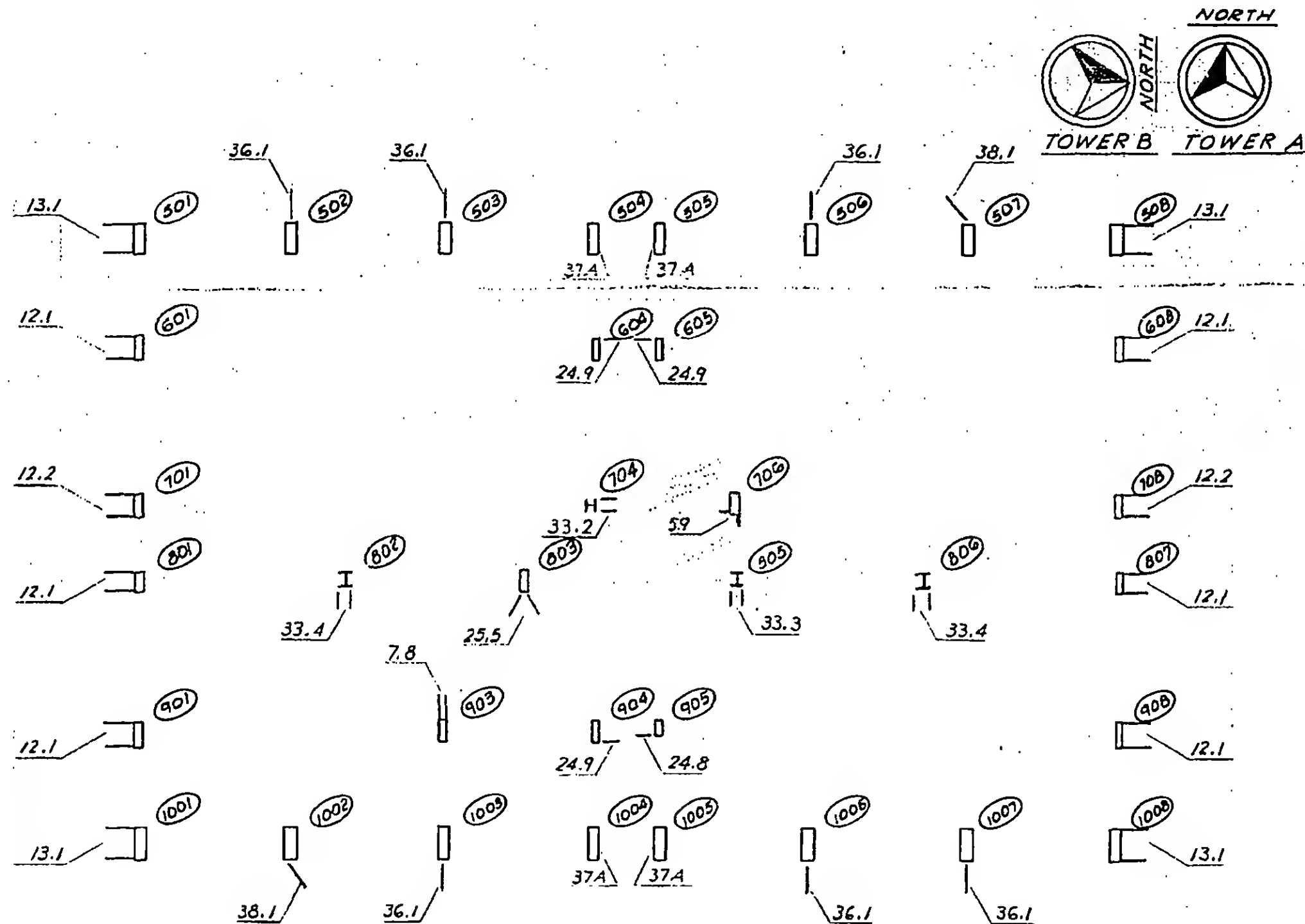
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS-KEY PLANS-FLR. 12-17 TOWER A-FLR. 12-17 TOWER B

DATE 2-7-69

REVISIONS



DESIGNED

J. D. Hall

DRAWN

F. Smith

REVIEWED

W. Brewer

18-ABI-16.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

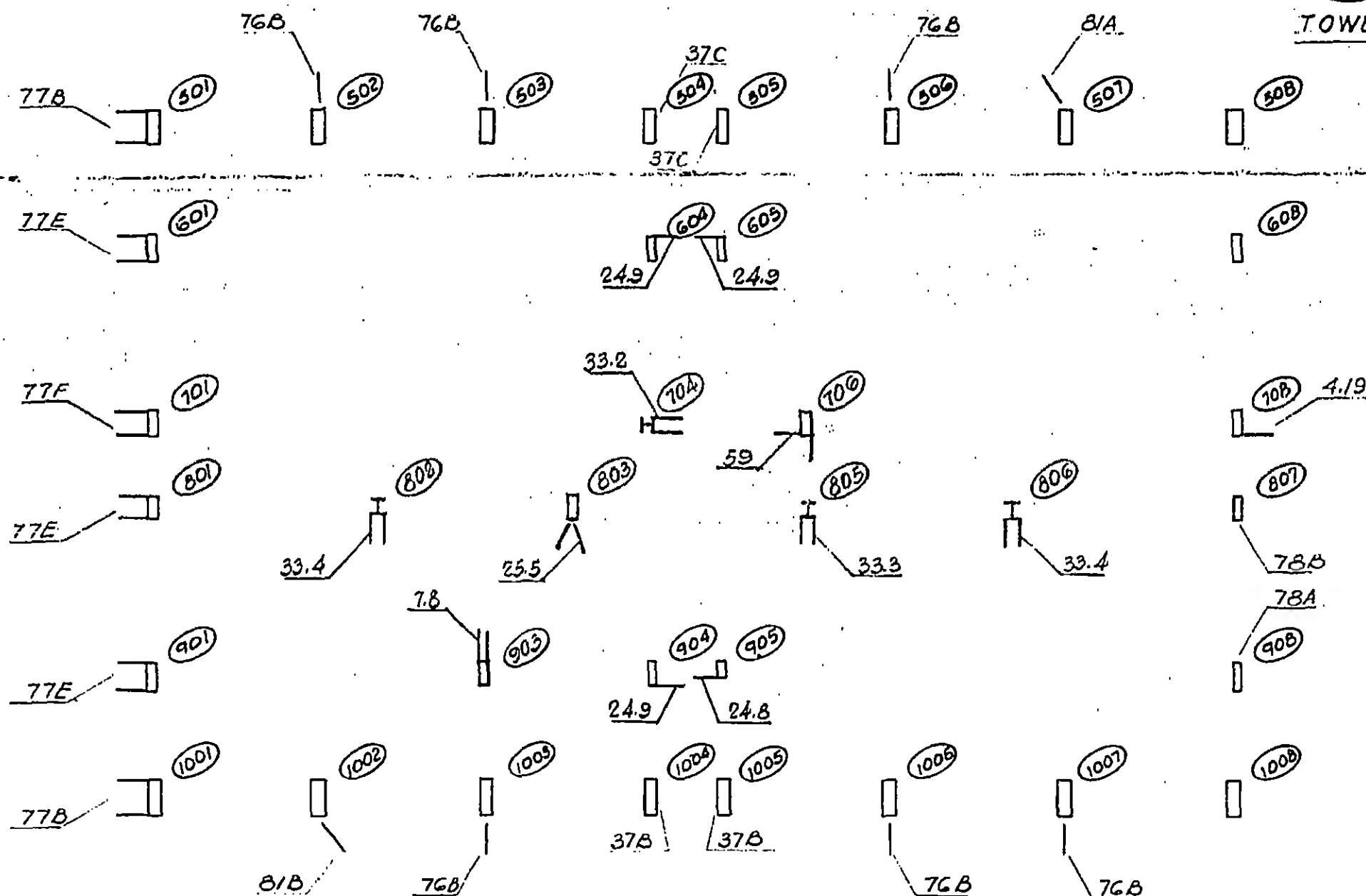
TITLE STRAP ANCHORS - KEY PLANS - FLOOR 12

DATE 10-1-69

REVISIONS



TOWER 'B'



DESIGNED

DRAWN

S.T.M.

REVIEWED

18-B1-16.2

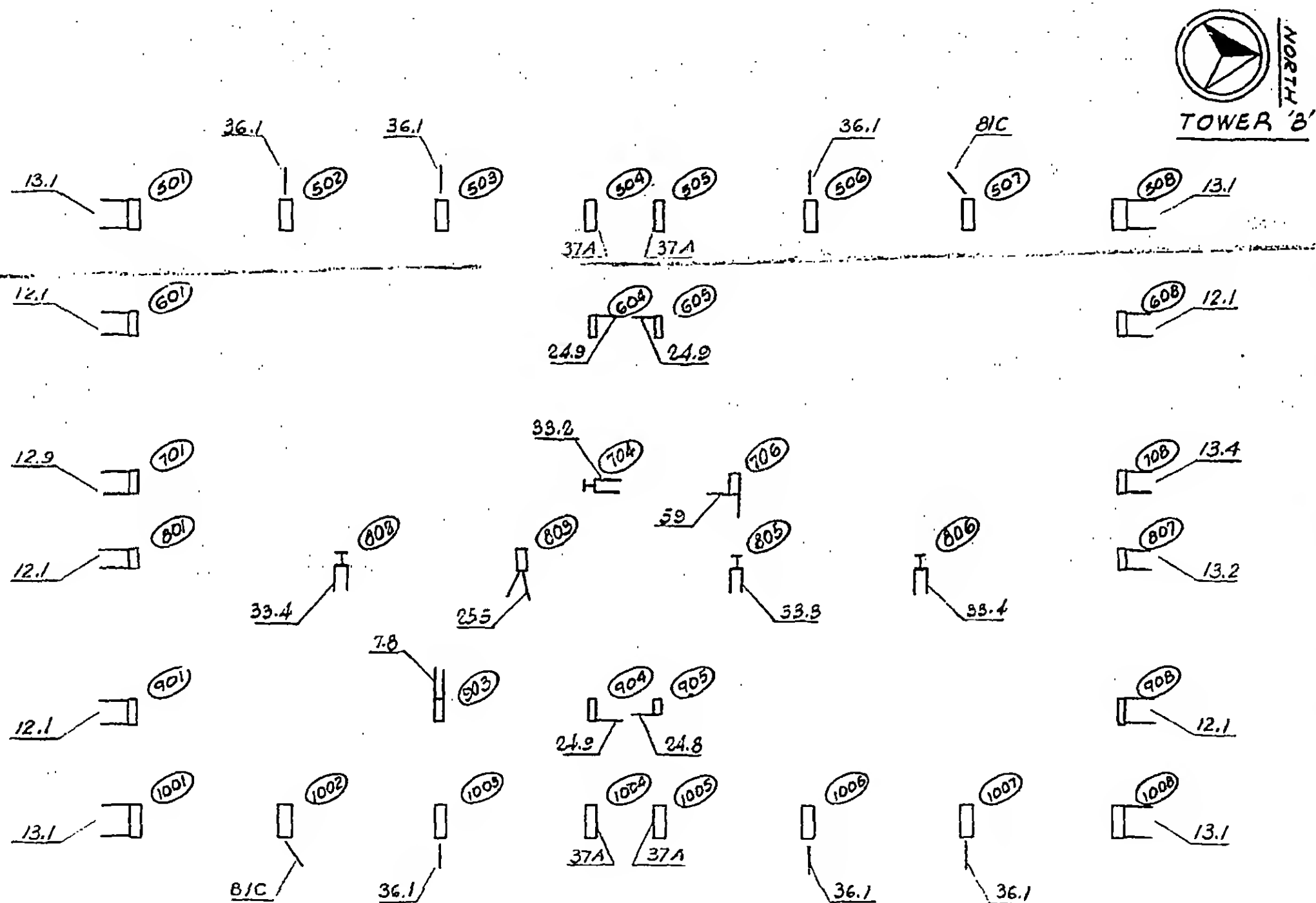
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 13

DATE 10-1-69

REVISIONS



DESIGNED

DRAWN

S.T.M.

REVIEWED

18-B1-16.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

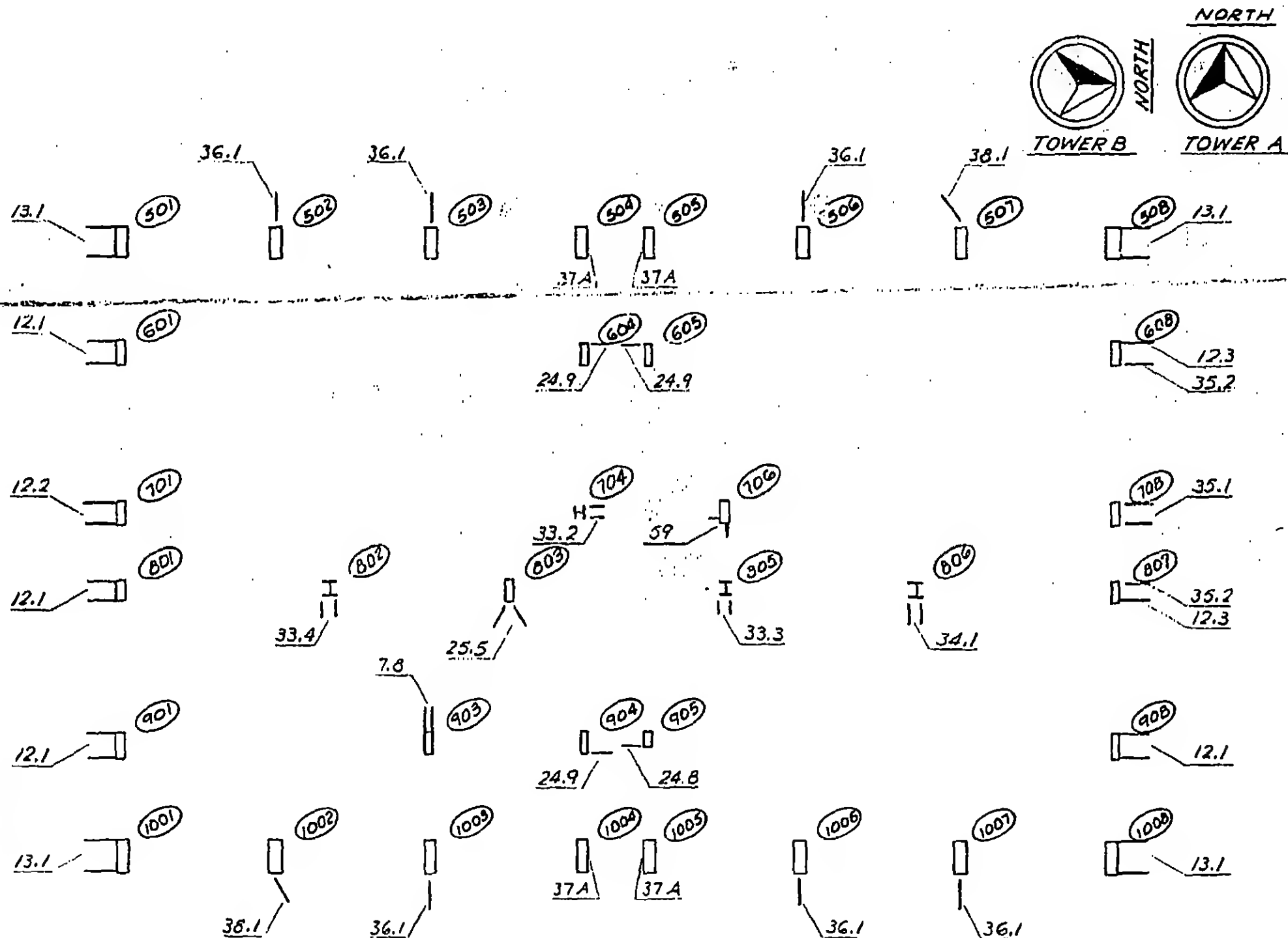
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 18

DATE 2-7-69

REVISIONS



DESIGNED
L. Robertson

DRAWN
F. Smith

REVIEWED
W. Brewer

18-ABI-17

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

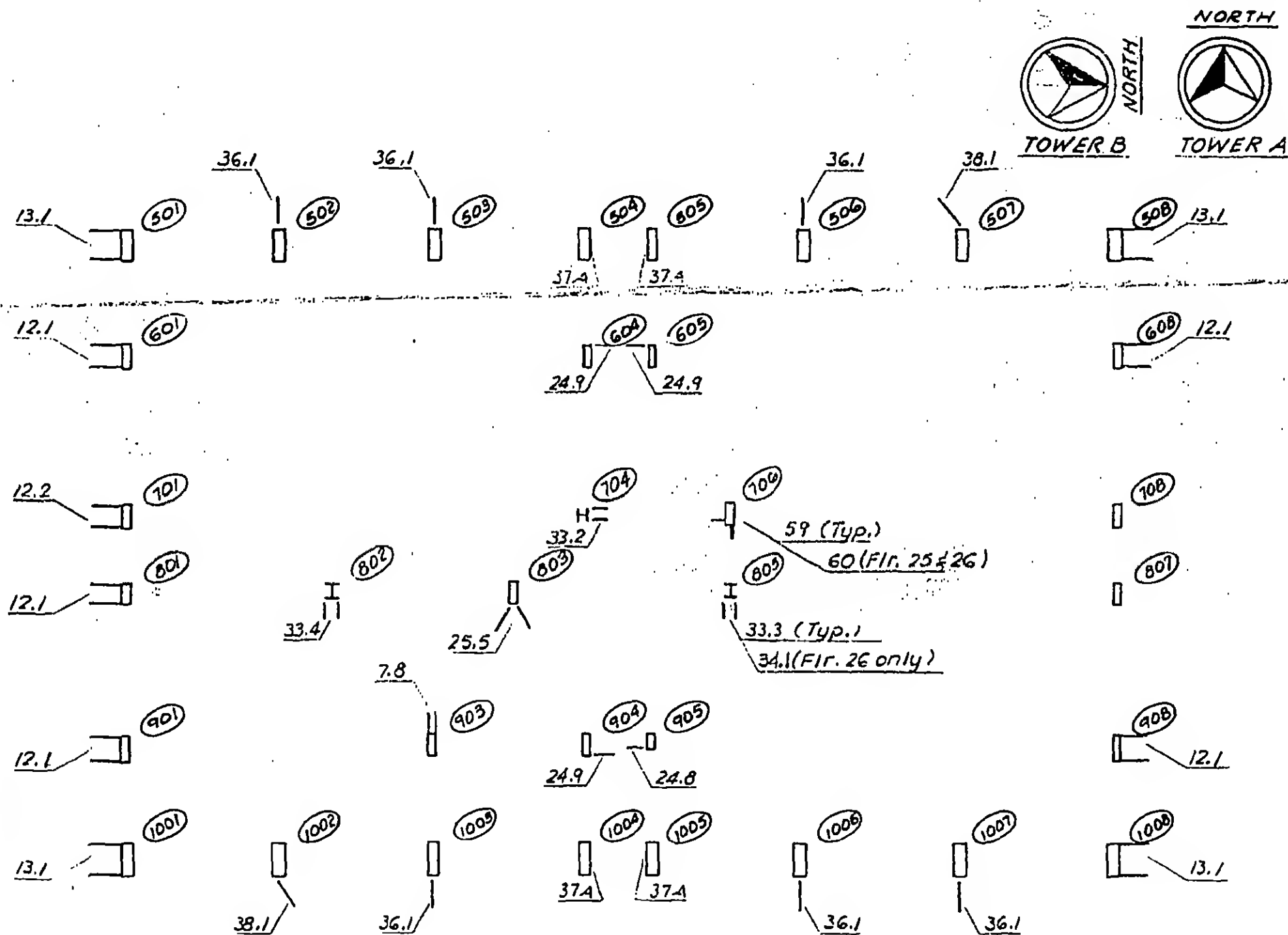
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 5 19 - 26

DATE 2-7-69

REVISIONS



DESIGNED
H. E. Robertson

DRAWN
F. Smith

REVIEWED
W. Brewer

18-ABI-18

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

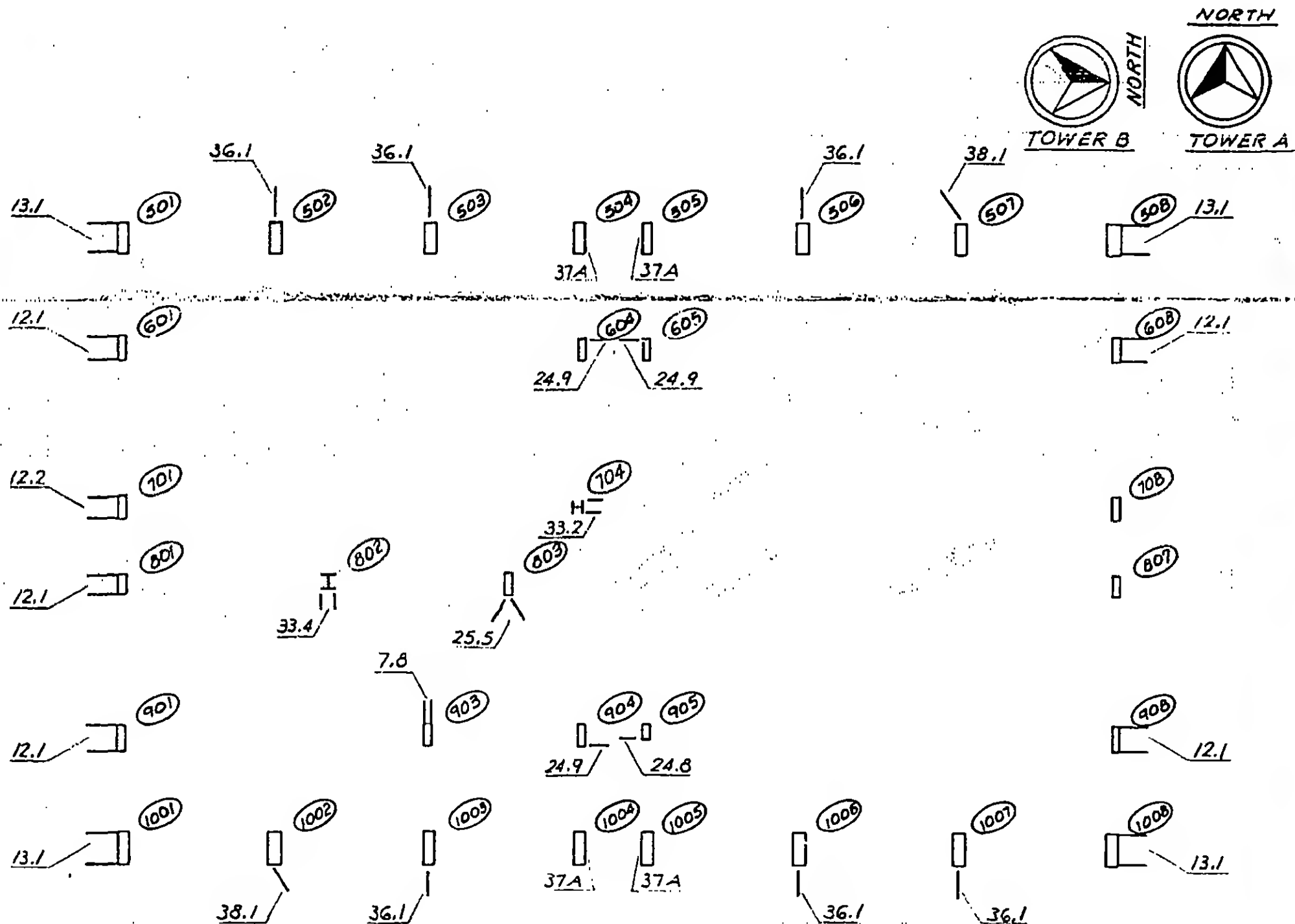
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOORS 27-33

DATE 2-7-69

REVISIONS



DESIGNED

L. E. Robertson

DRAWN

F. Smith

REVIEWED

W. Brewer

18-ABI-19

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

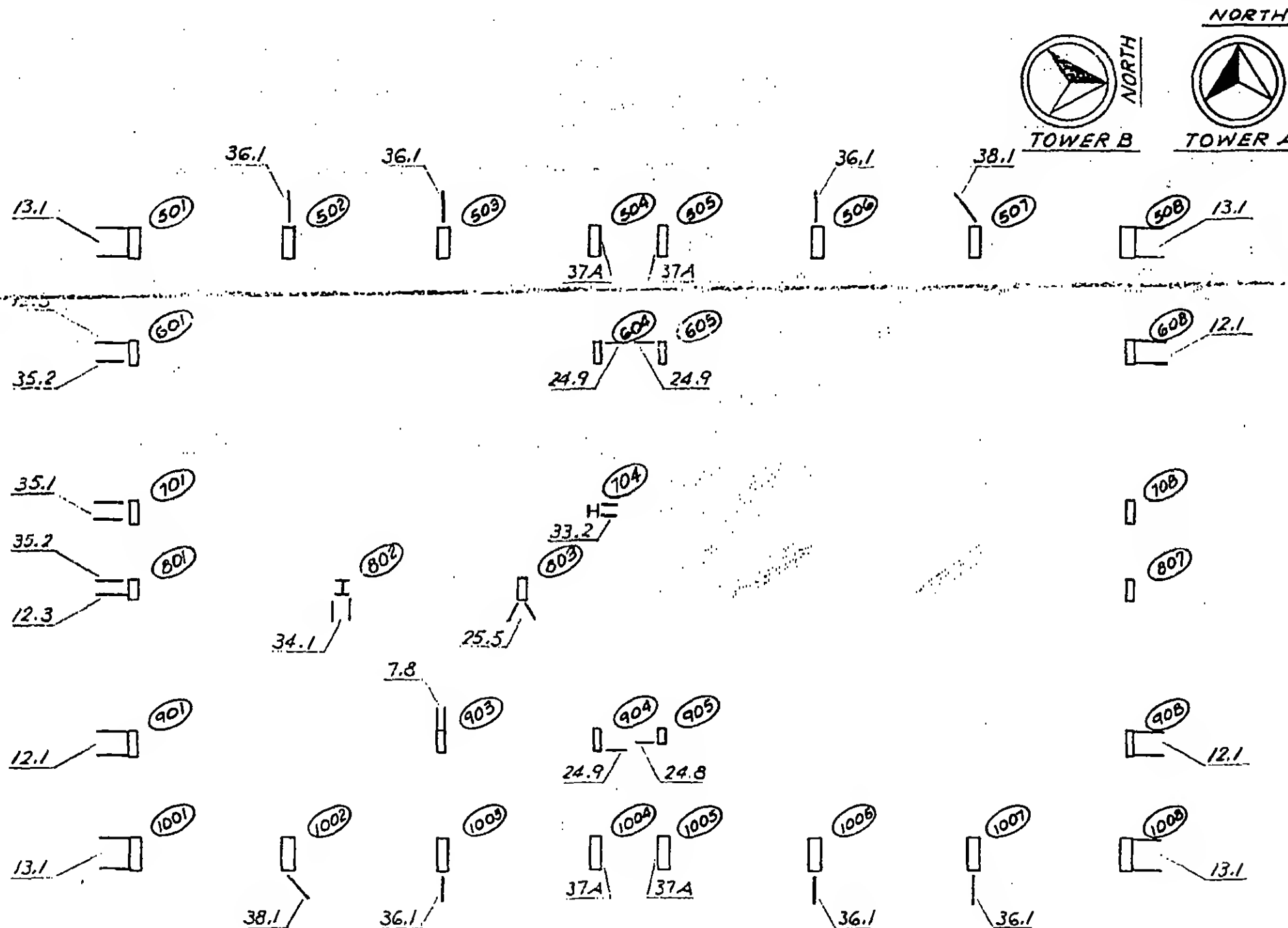
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 34

DATE 2-7-69

REVISIONS



DESIGNED
J. O. MacEl
DRAWN
F. Smith
REVIEWED
W. Brewer

18-ABI-20

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

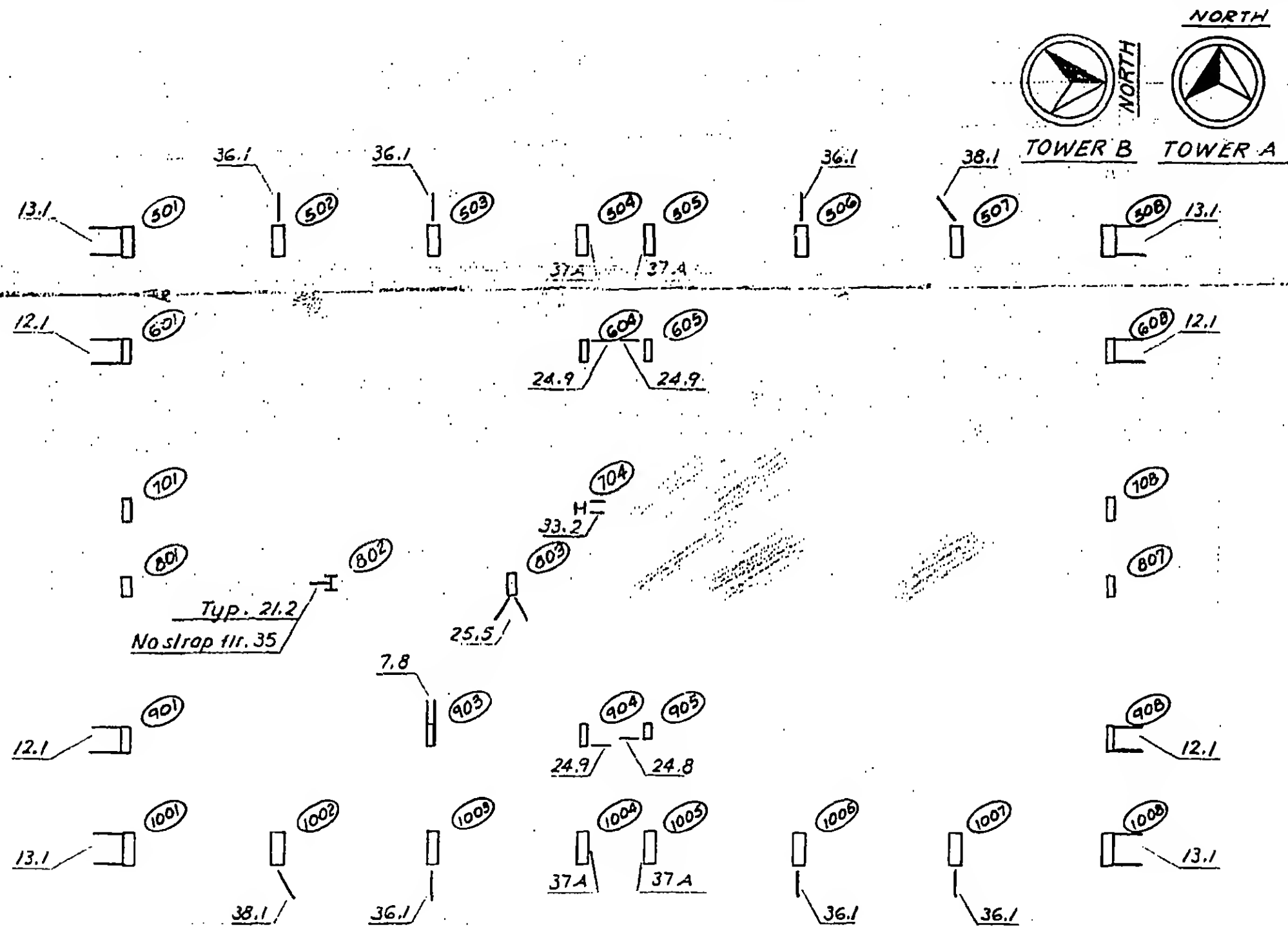
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOORS 35-38

DATE 2-7-69

REVISIONS



DESIGNED L. E. Robertson

DRAWN F. Smith

REVIEWED W. Brewer

16-ABI-21

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

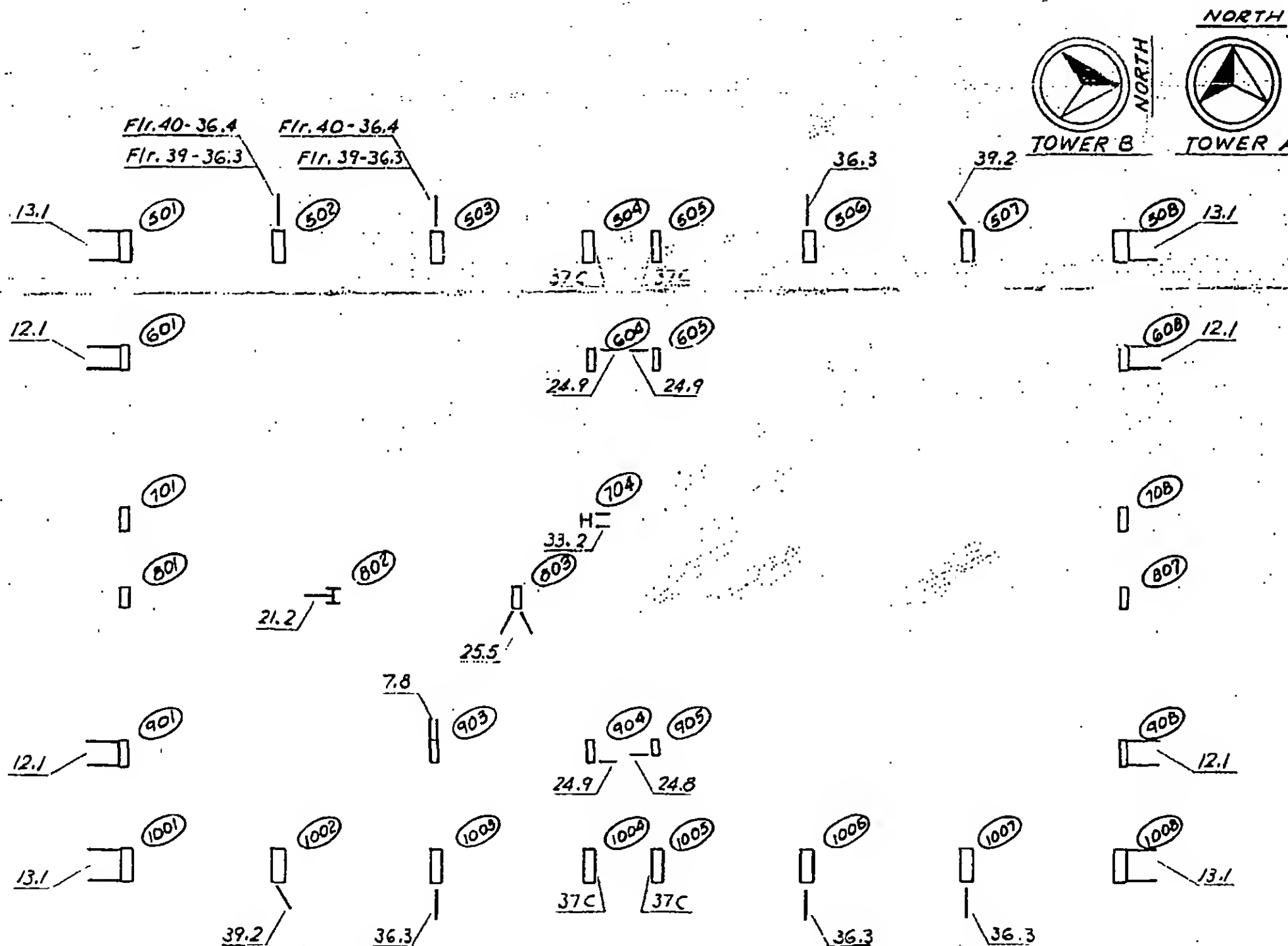
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 39 & 40

DATE 2-7-69

REVISIONS



DESIGNED
L. O. Helle
DRAWN
F. Smith
REVIEWED
W. Brewer

18-ABI-22

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

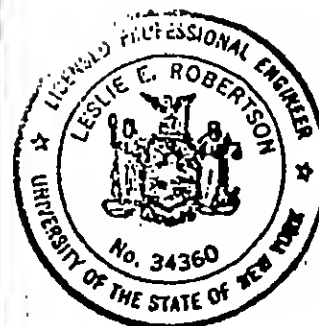
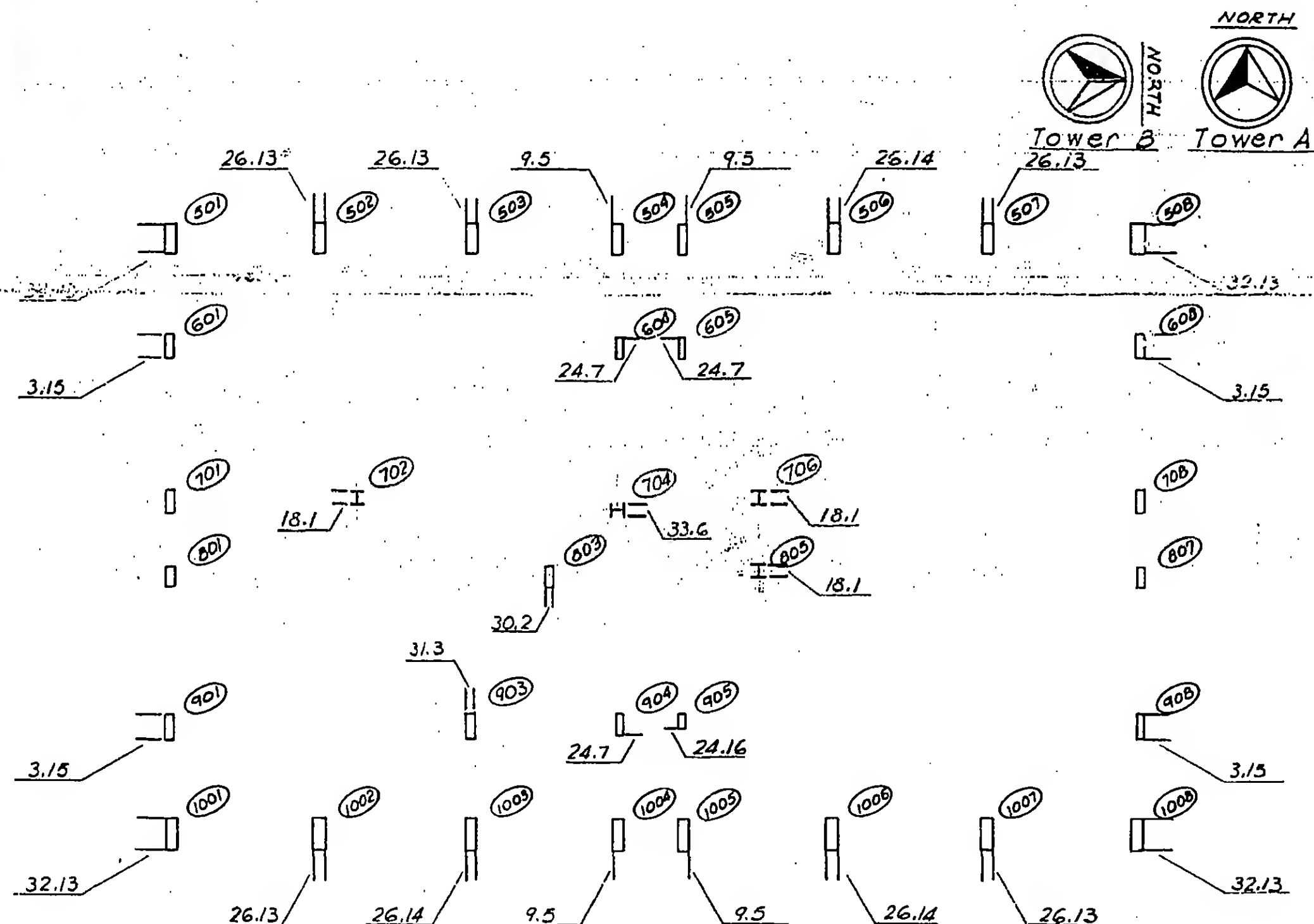
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 41

DATE 5-28-69

REVISIONS



DESIGNED

DRAWN

REVIEWED

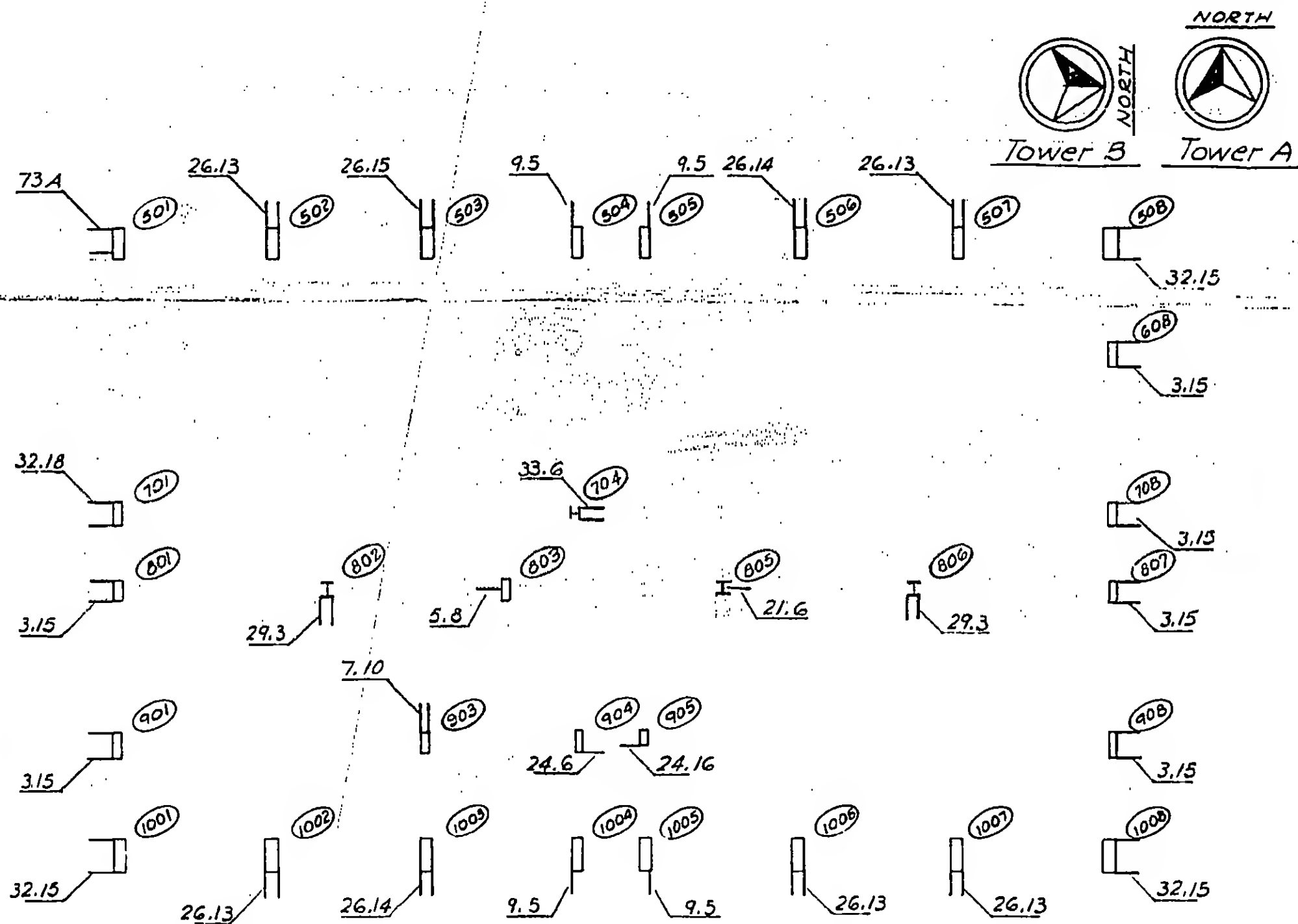
18-AB1-23

Structural & Civil Engineers

TITLE KEY PLAN FOR ANCHOR STRAPS- FLOOR 43

DATE 5-28-69

REVISIONS



DESIGNED

DRAWN

REVIEWED

18-AB/- 24

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

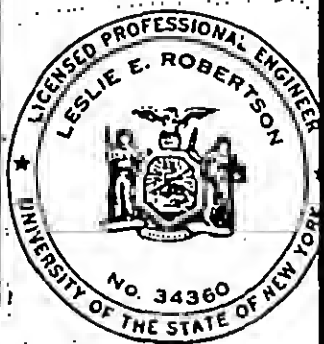
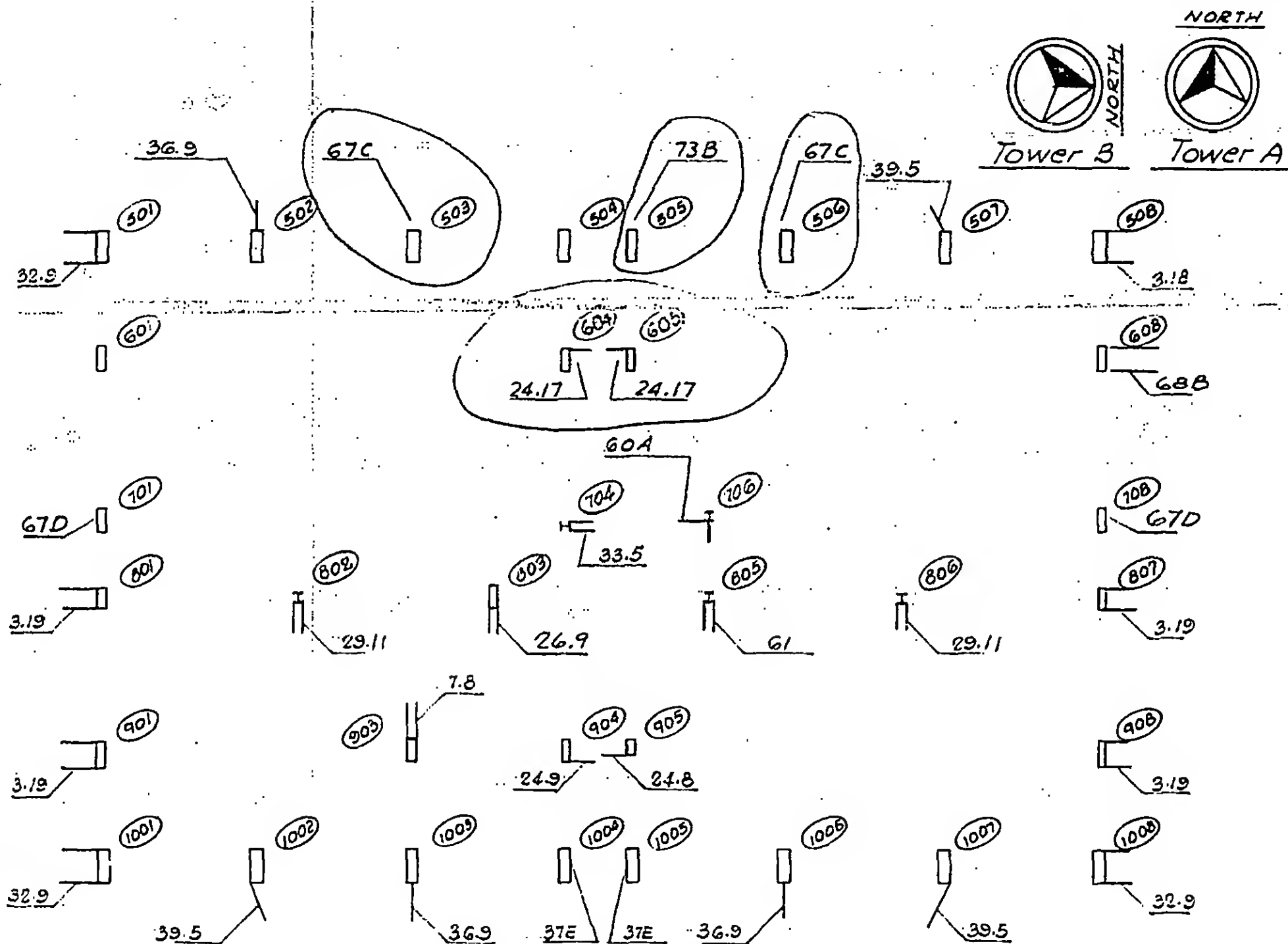
PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS- FLOOR 44

DATE 4-30-69

REVISIONS

5-28-69



DESIGNED

DRAWN
S.T.M.

REVIEWED

W. Brewer

18-ABI-25

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

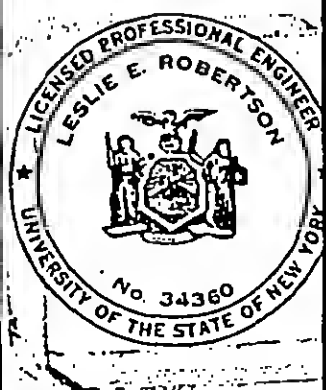
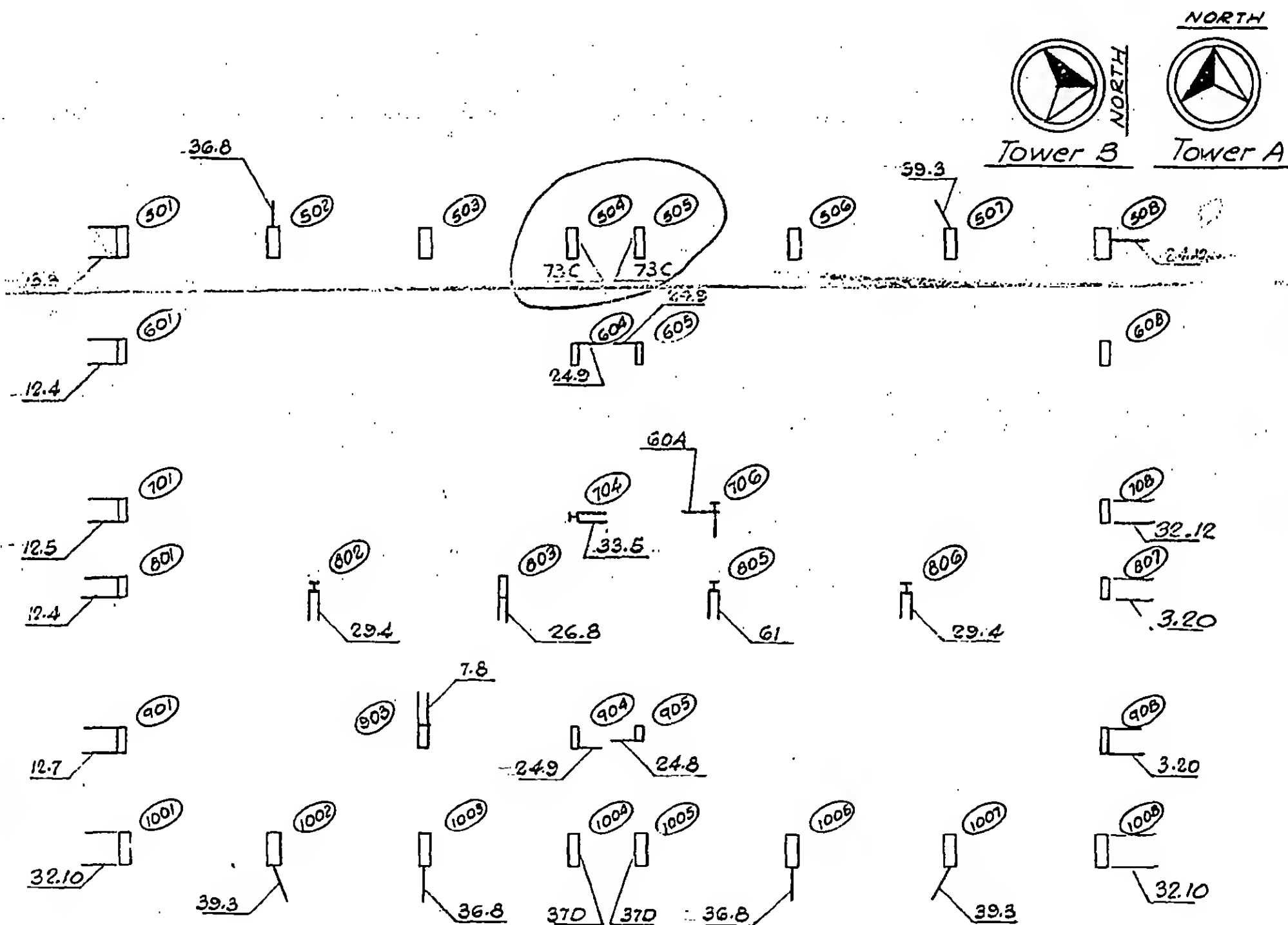
PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS- FLOOR 45

DATE 4-30-69

REVISIONS

5-28-69



DESIGNED

DRAWN S.T.M.

REVIEWED W. Brewer

18-ABI-26

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

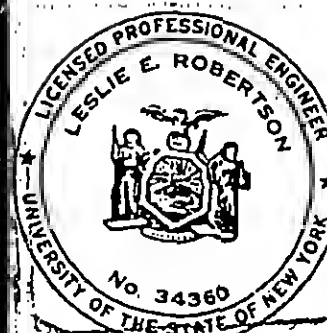
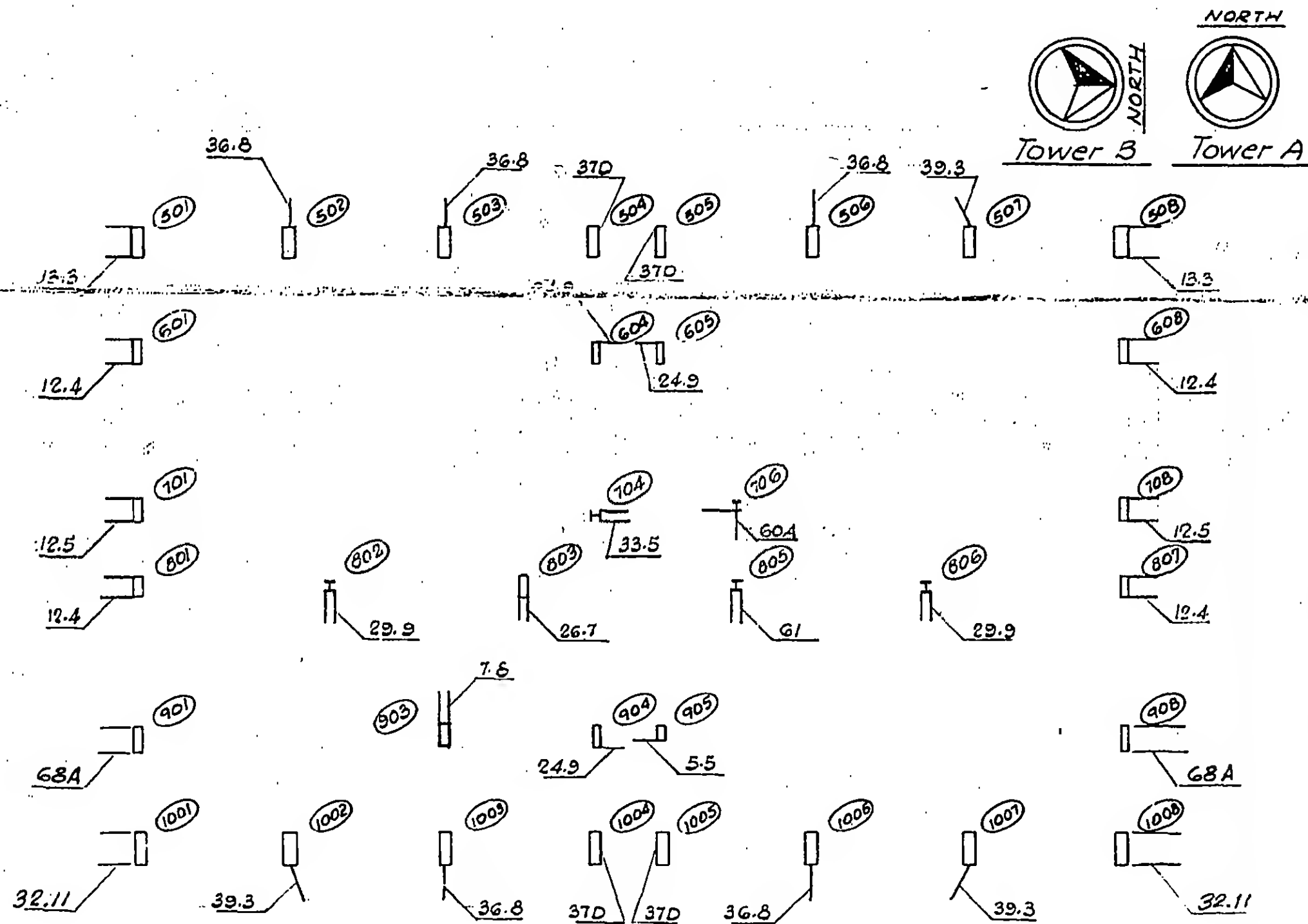
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS- FLOOR 46

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN

STM

REVIEWED
W. Brewer

18-AB1-27

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

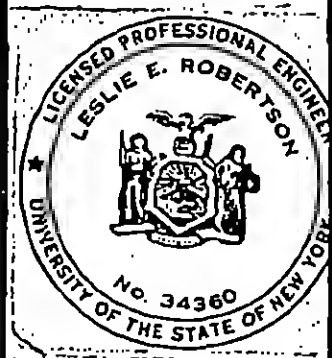
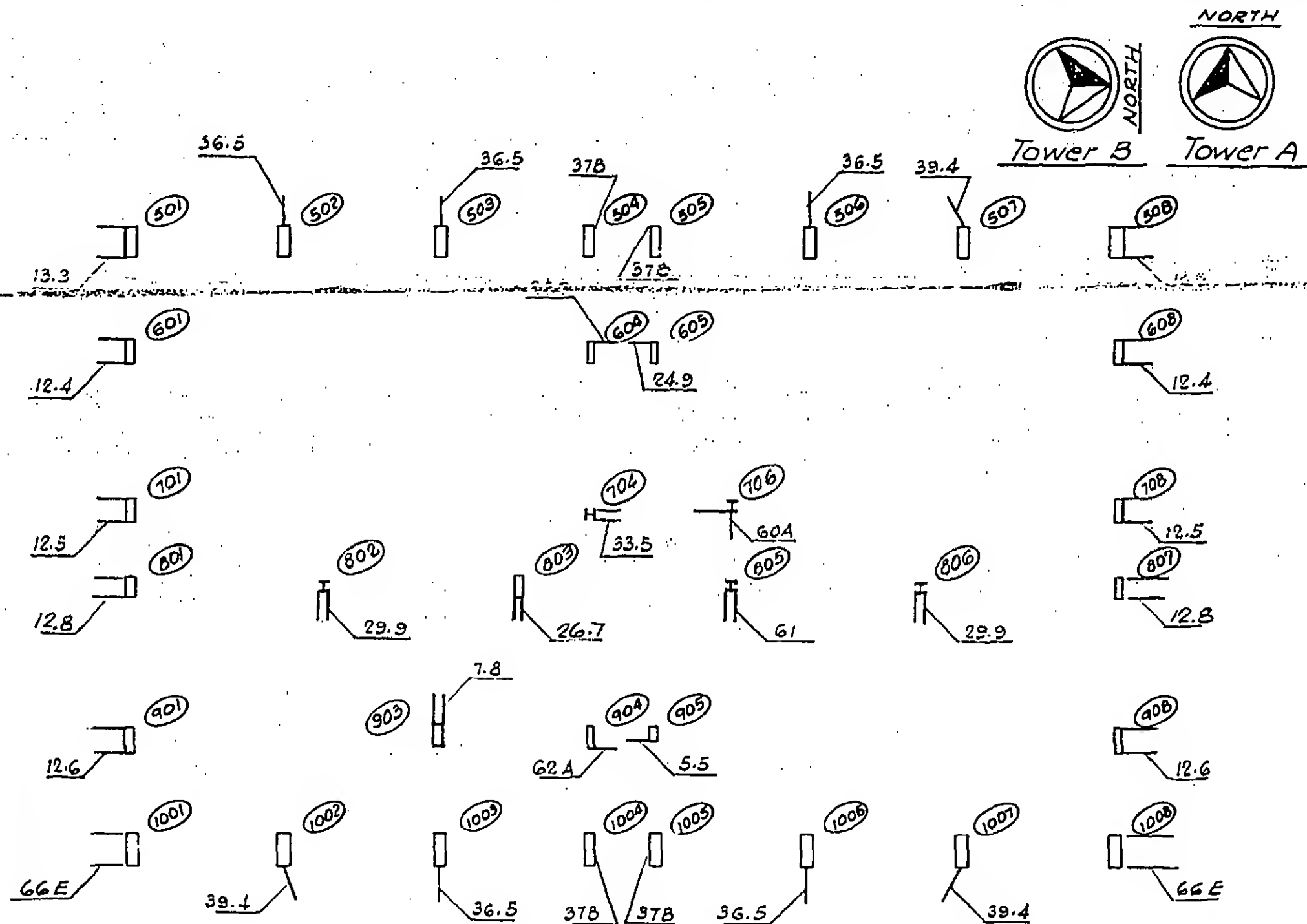
Structural & Civil Engineers

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TITLE KEY PLAN FOR ANCHOR STRAPS- FLOOR 47

DATE 4-30-69

REVISIONS



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DRAWN S.T.M.
REVIEWED W. Prewer

18-AB1-28

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

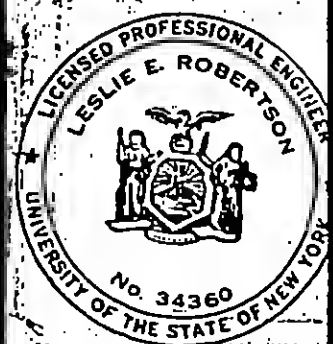
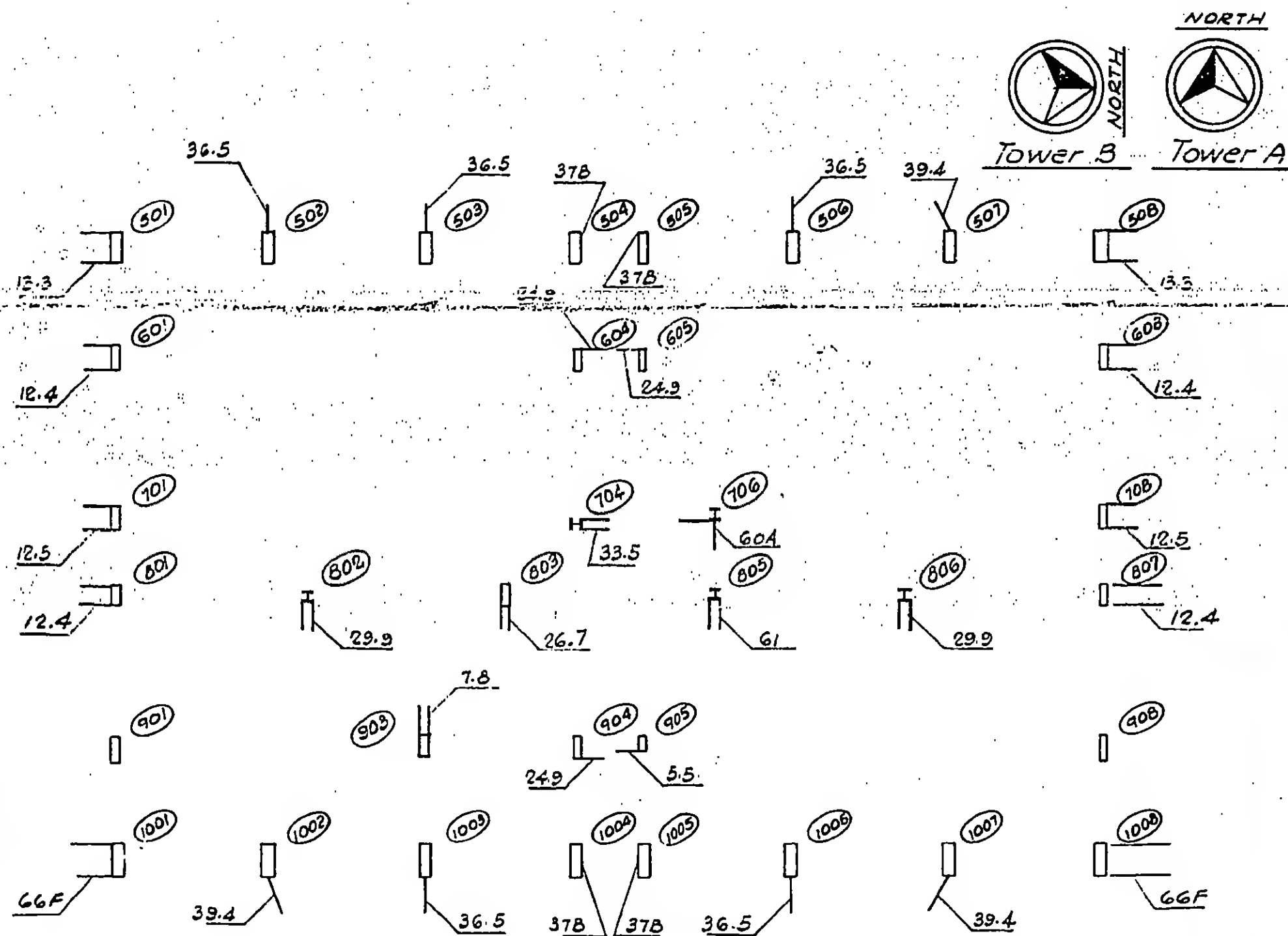
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS- FLOOR 48

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN S.T.M.

REVIEWED W. Brewer

18-ABI-29

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

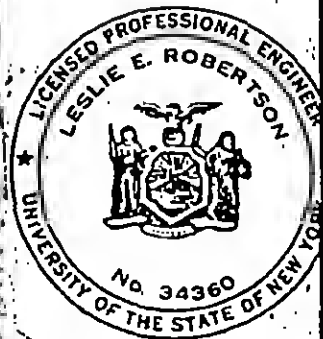
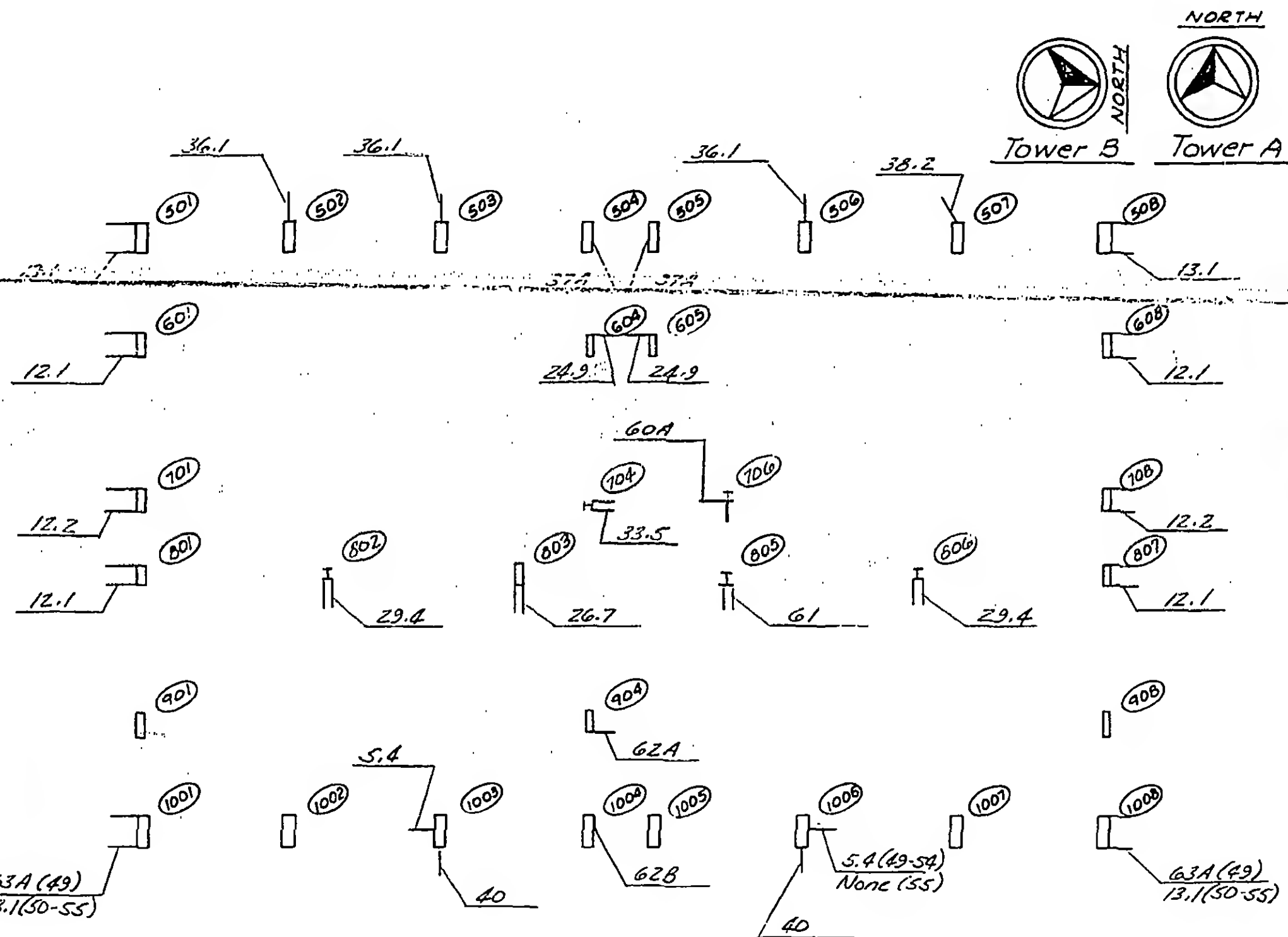
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 49-55

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN
J. AdamsREVIEWED
(10) Brewer

18-AB1-30

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

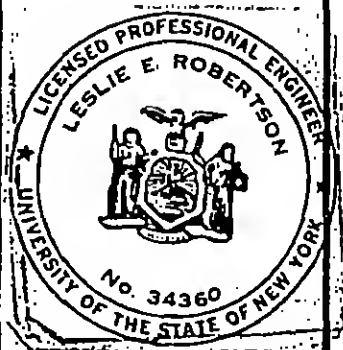
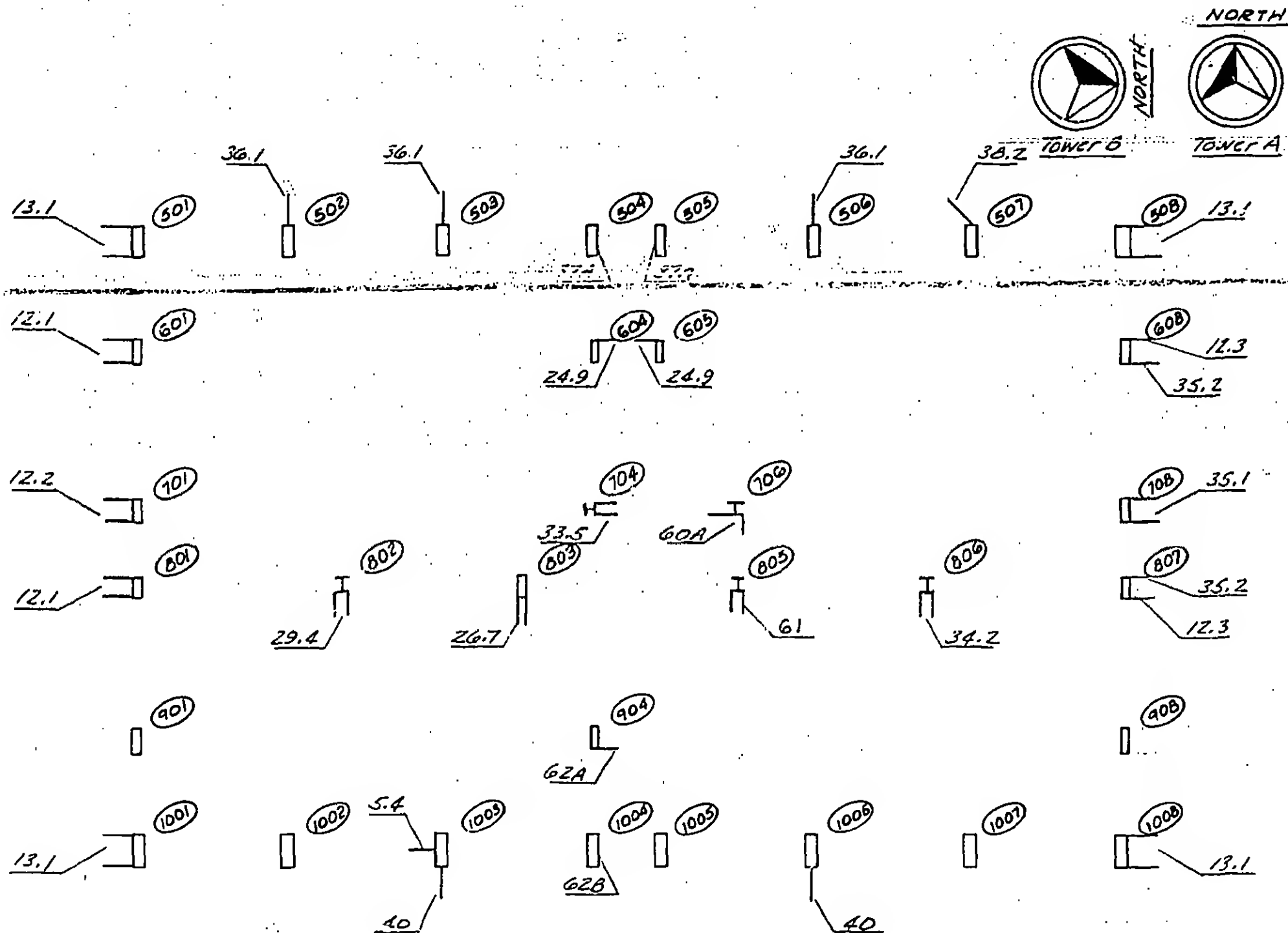
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 56

DATE 4-30-69

REVISIONS



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DRAWN
J. Adams

REVIEWED
W. Brewer

18-ABI-31

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

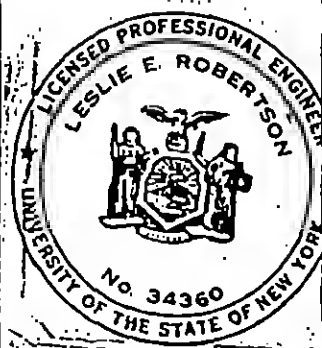
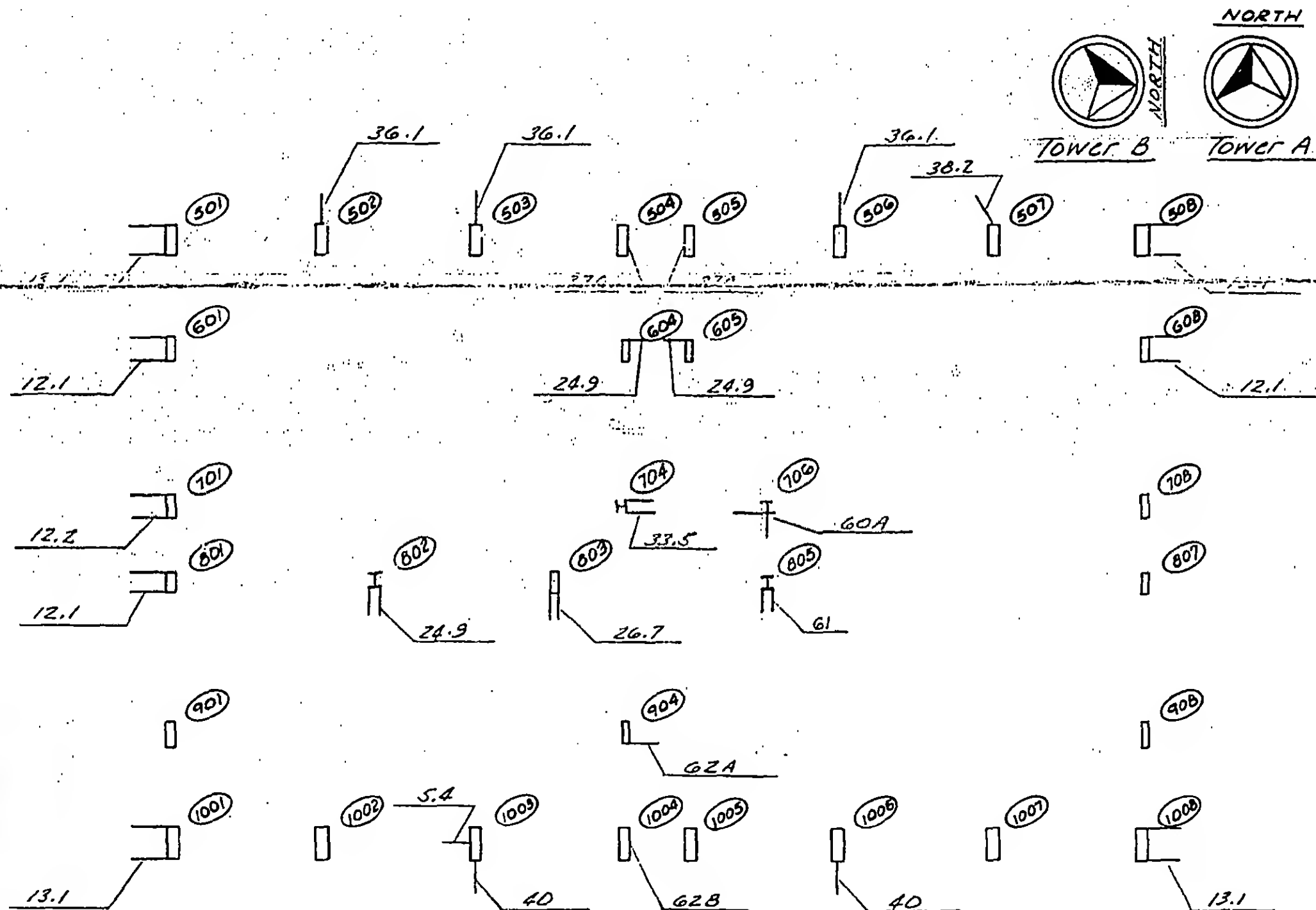
Structural & Civil Engineers

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TITLE STRAP ANCHORS - KEY PLANS - FLOOR 57

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN J. Adams

REVIEWED W. Brewer

18-AB1-32

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

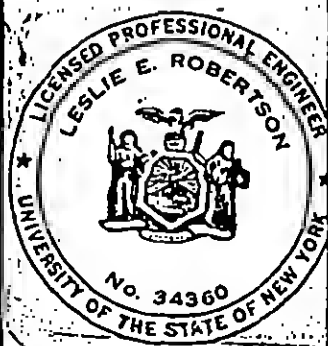
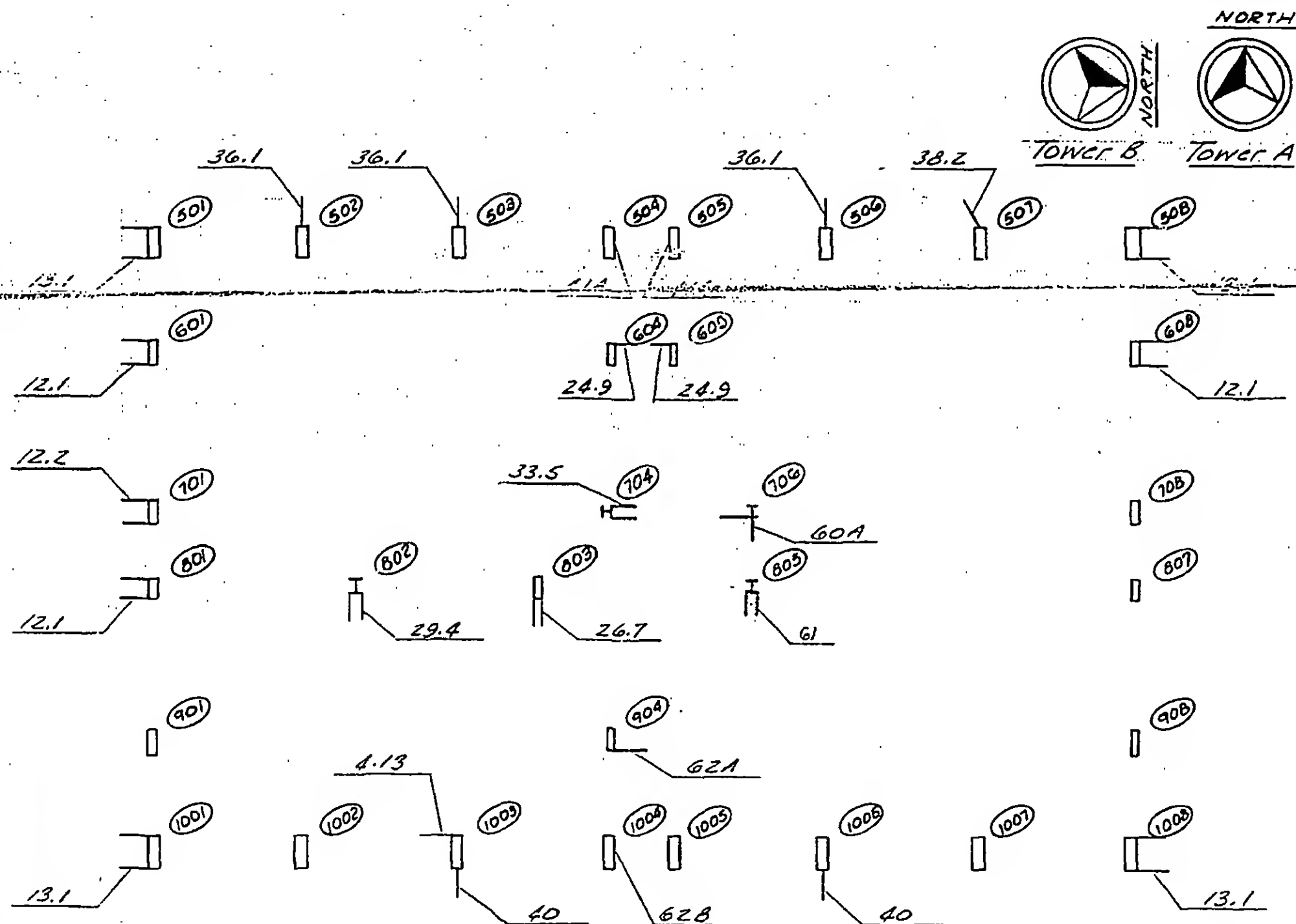
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FL 58-59

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN J. Adams

REVIEWED W. Brewer

18-A81-33

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

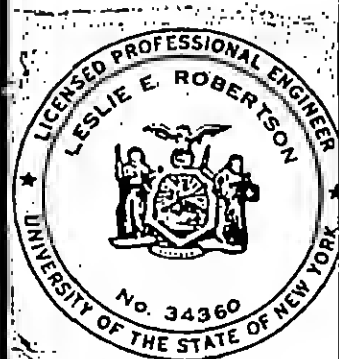
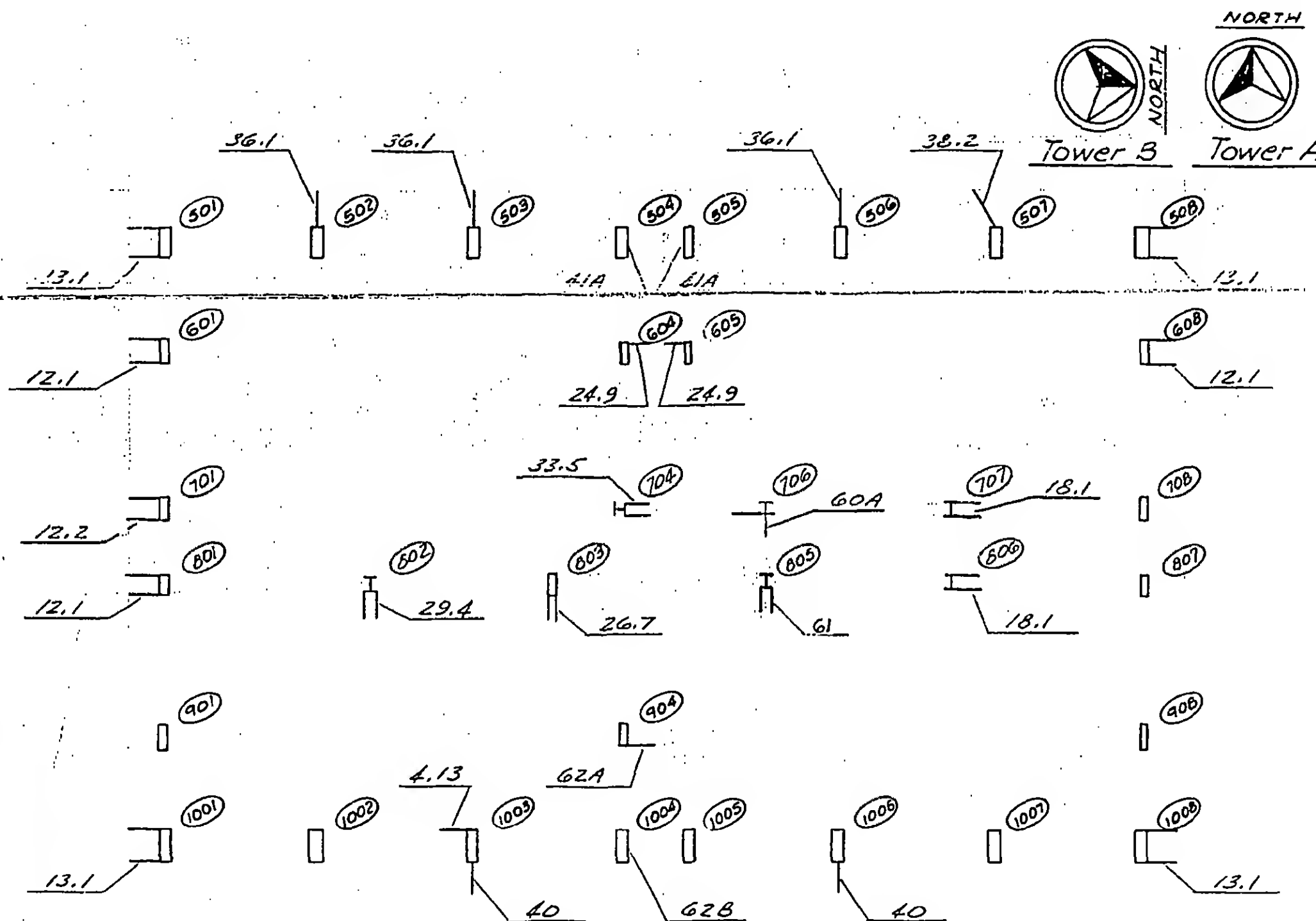
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 60

DATE 4-30-69

REVISIONS



DESIGNED
DRAWN J. Adams
REVIEWED W. Brewer

18-AB1-34

1044-L

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

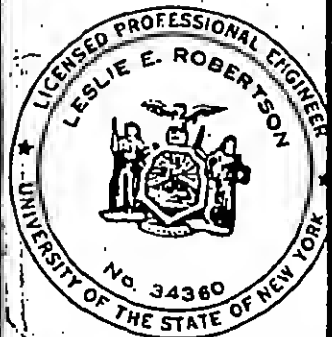
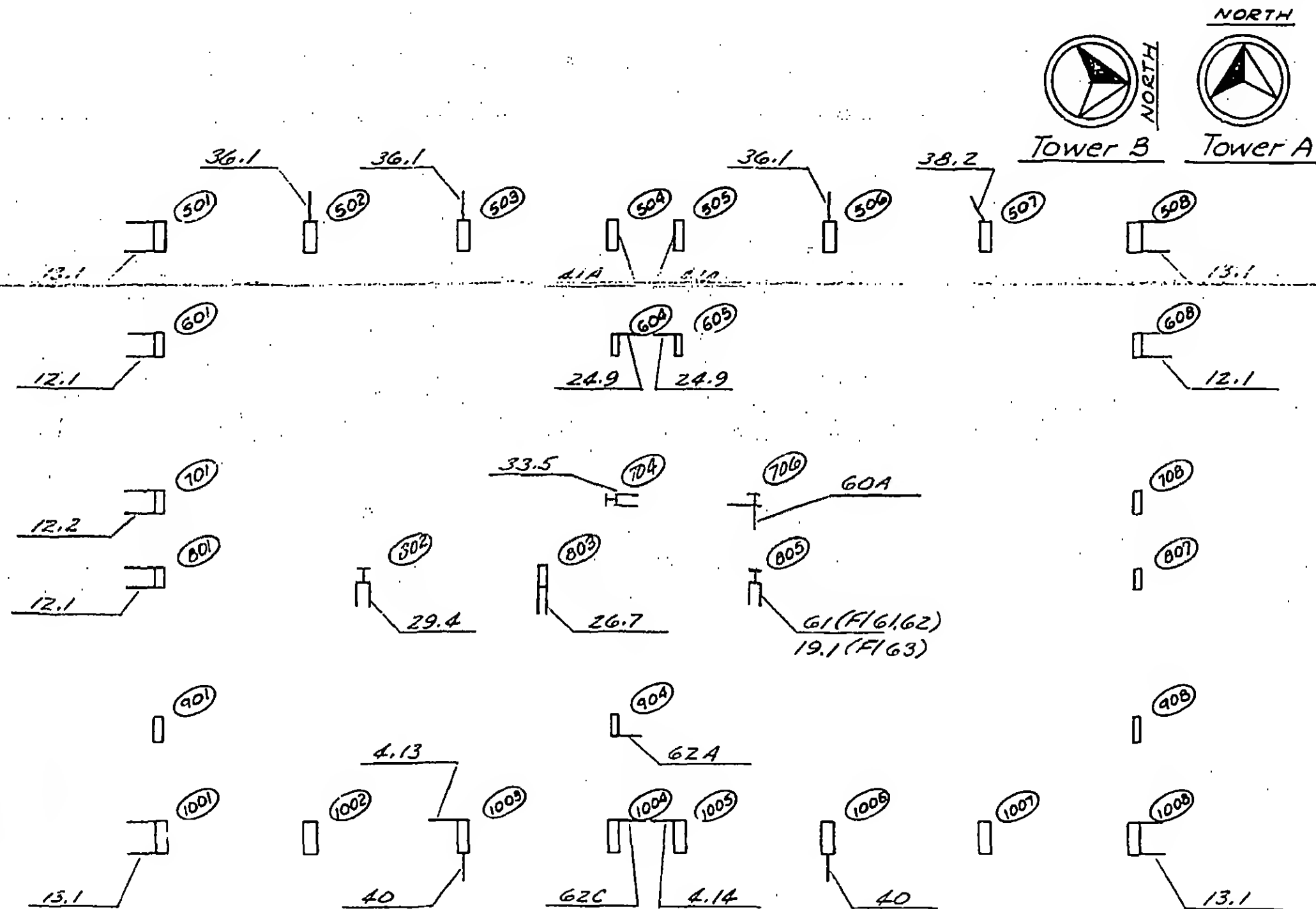
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 61-63

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN

J. Adams

REVIEWED

W. Brewer

18-ABI-35

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

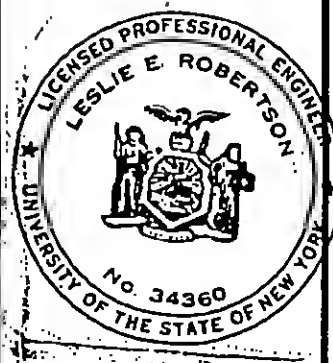
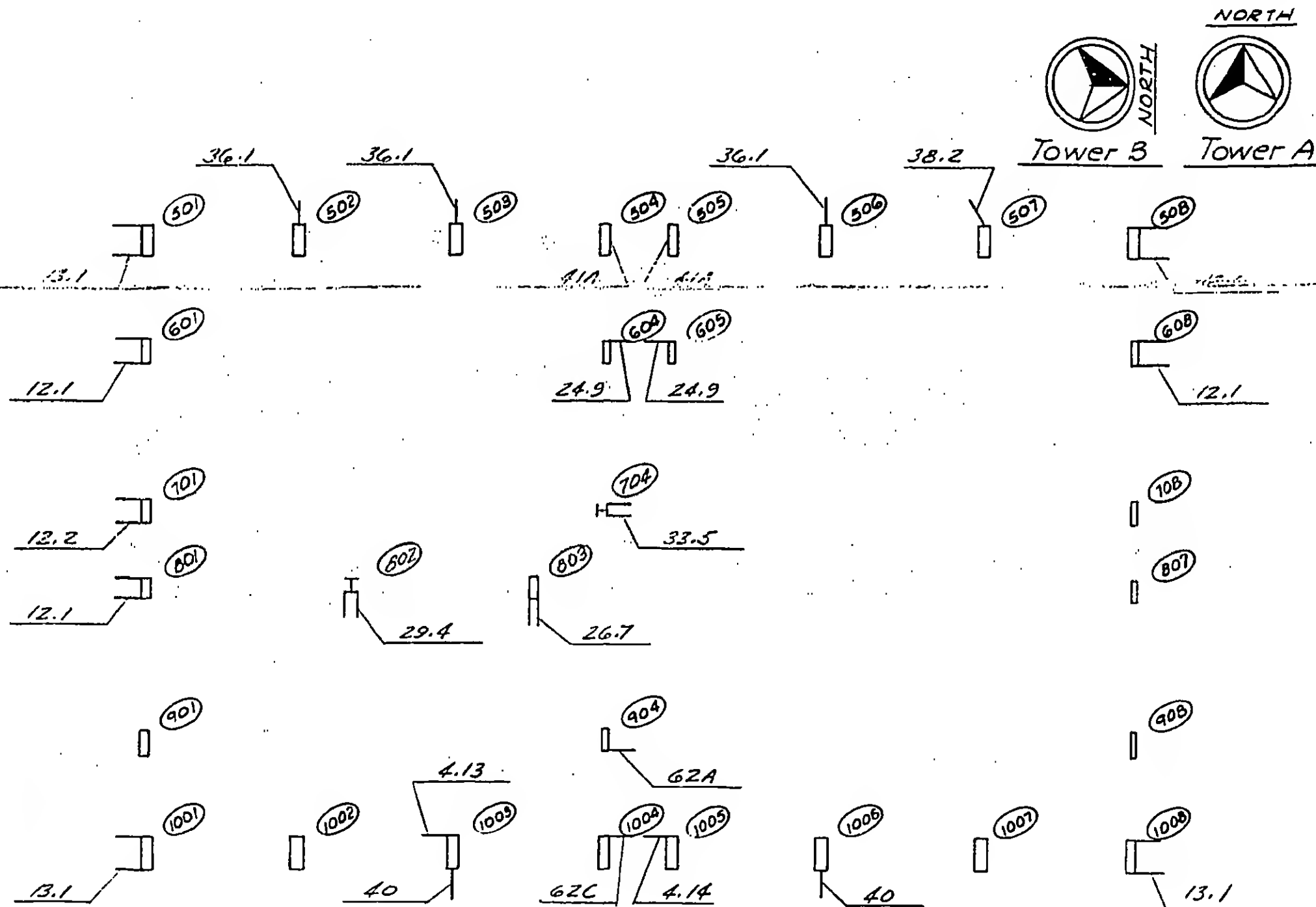
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 64-66

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN

J. Adams

REVIEWED

W. Brewer

18-AB1-36

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PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL67-68-TOWER A

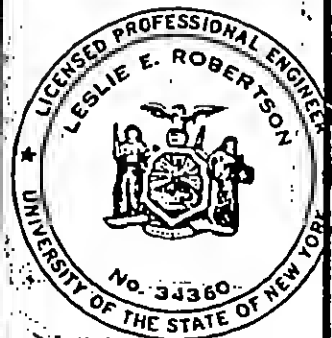
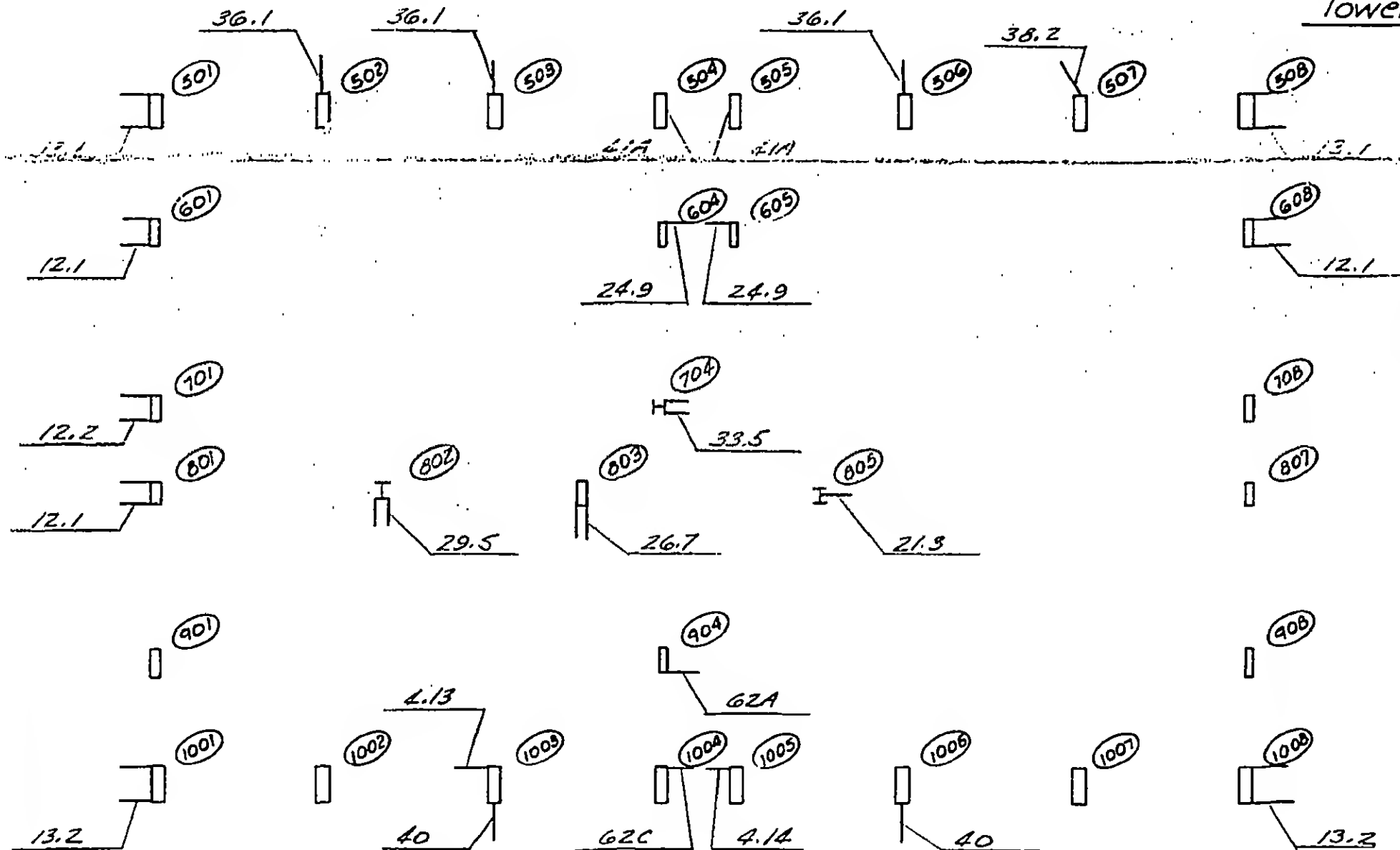
DATE 4-30-69

REVISIONS

NORTH



Tower A



DESIGNED

DRAWN
J. Adams

REVIEWED
W. Brewer

18-AB1-37

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 69-TOWER A

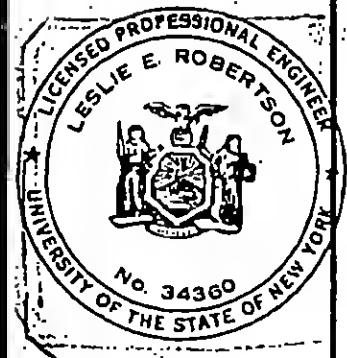
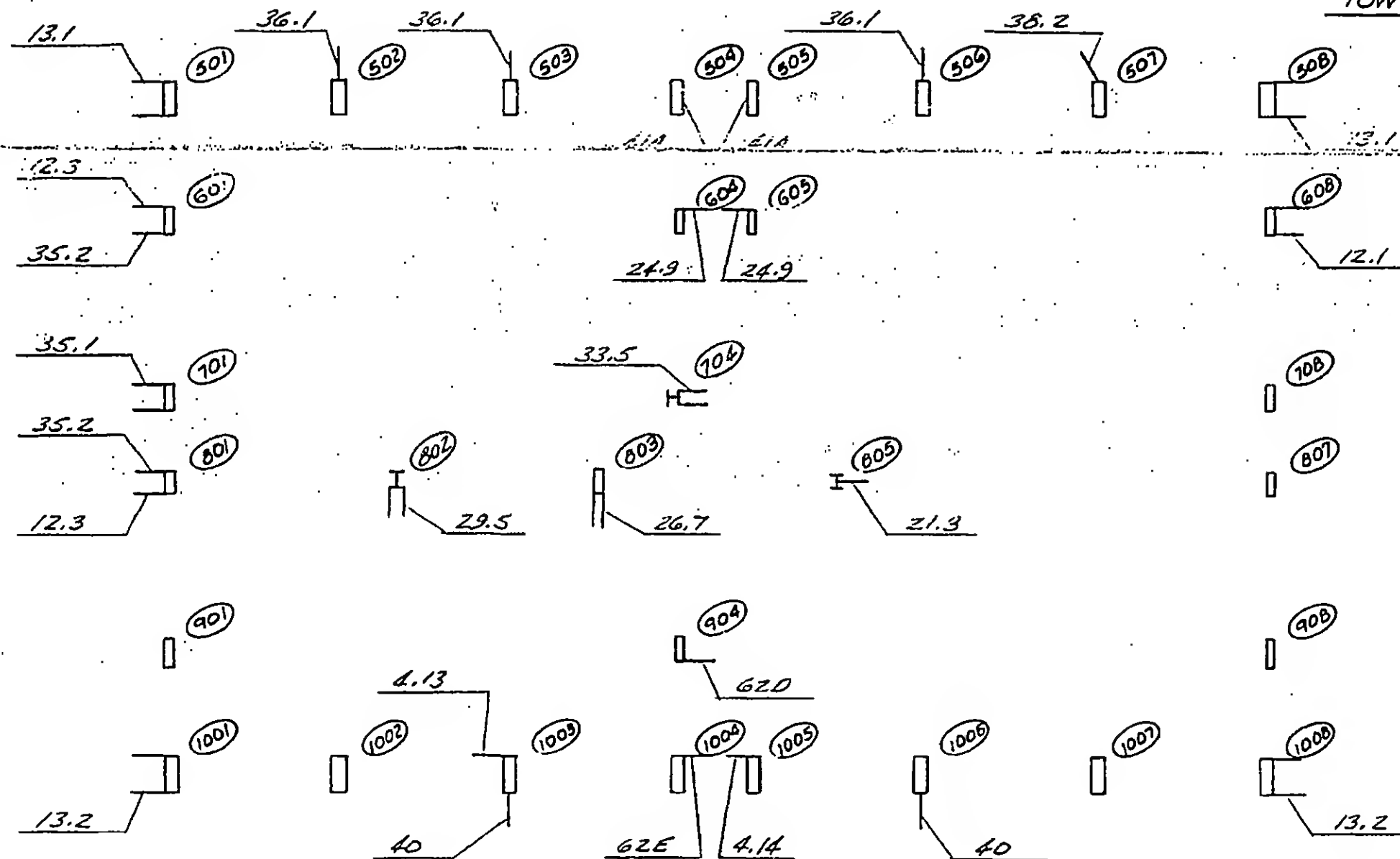
DATE 4-30-69

REVISIONS

NORTH



Tower A



4

DESIGNED

DRAWN J. Adams

REVIEWED W. Brewer

18-AB1-38

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

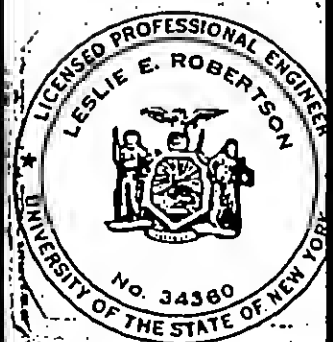
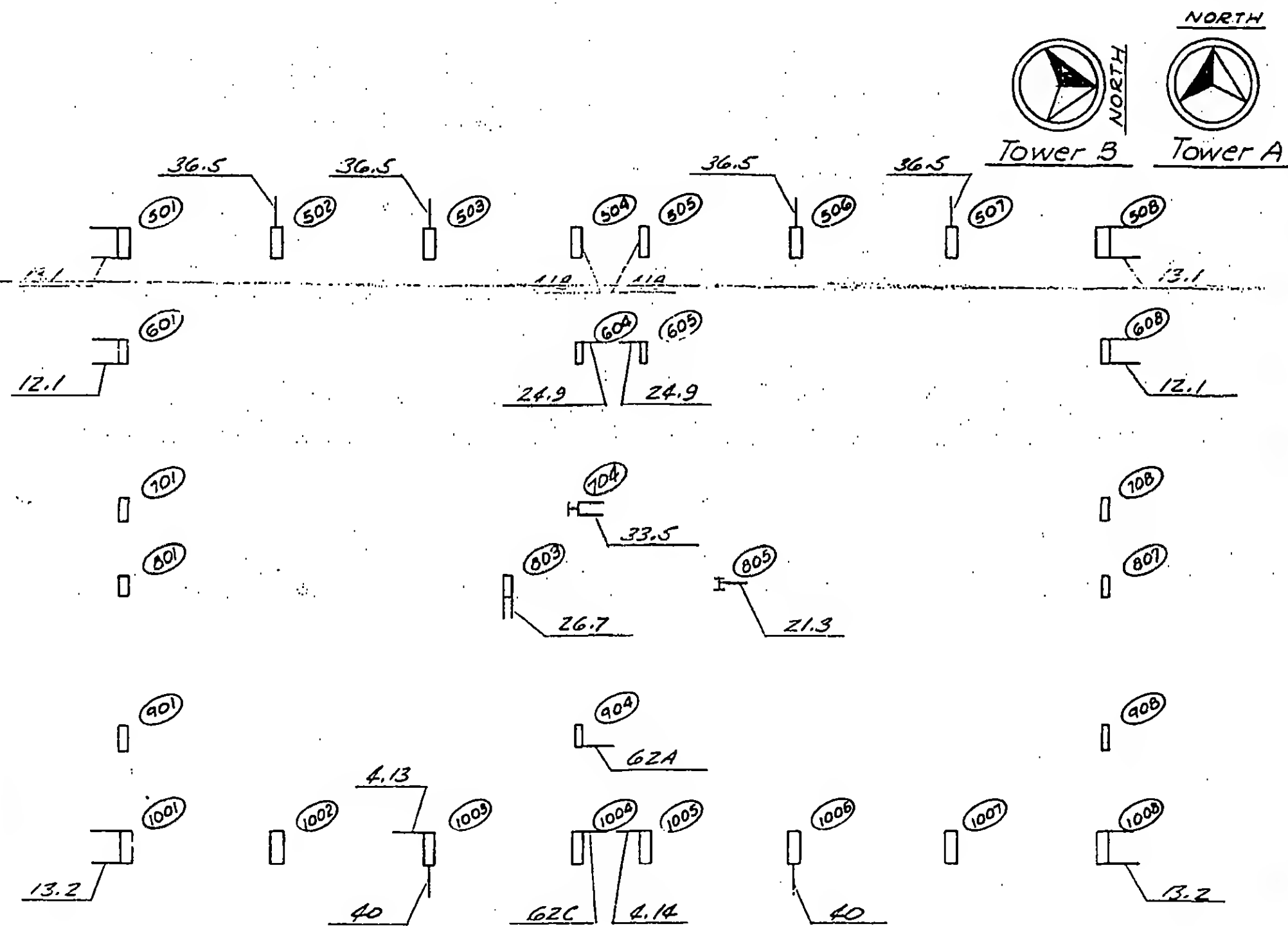
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 70-71

DATE 4-30-69

REVISIONS



DESIGNED

DRAWN J. Adams

REVIEWED W. Brewer

18-AB1-39

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

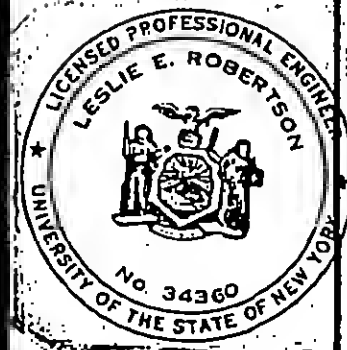
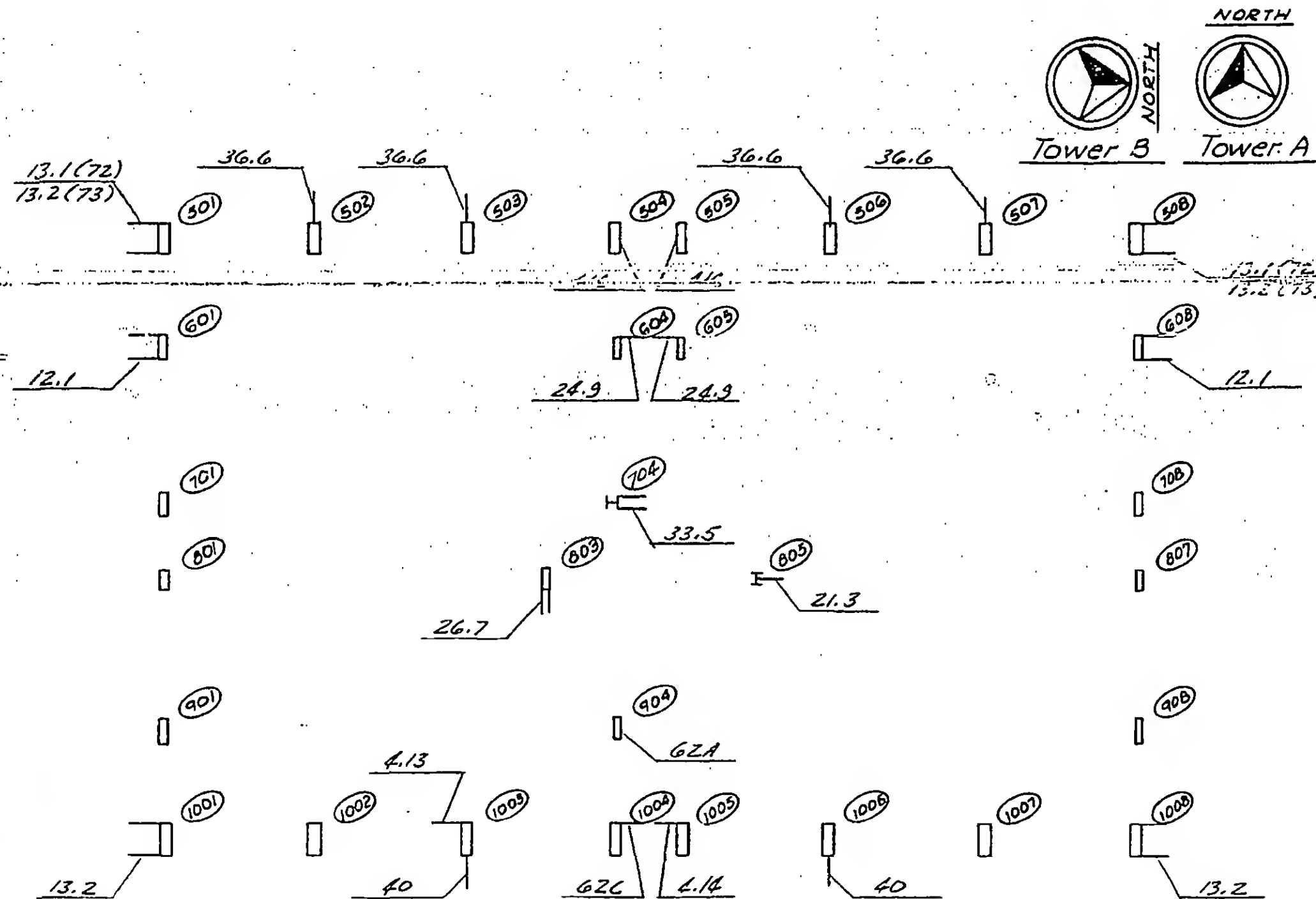
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 72-73

DATE 4-30-69

REVISIONS



16

DESIGNED

DRAWN

J. Adams

REVIEWED

W. Brewer

18-AB1-40

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

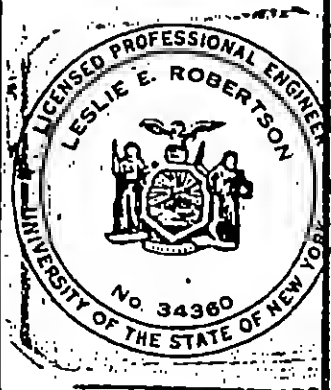
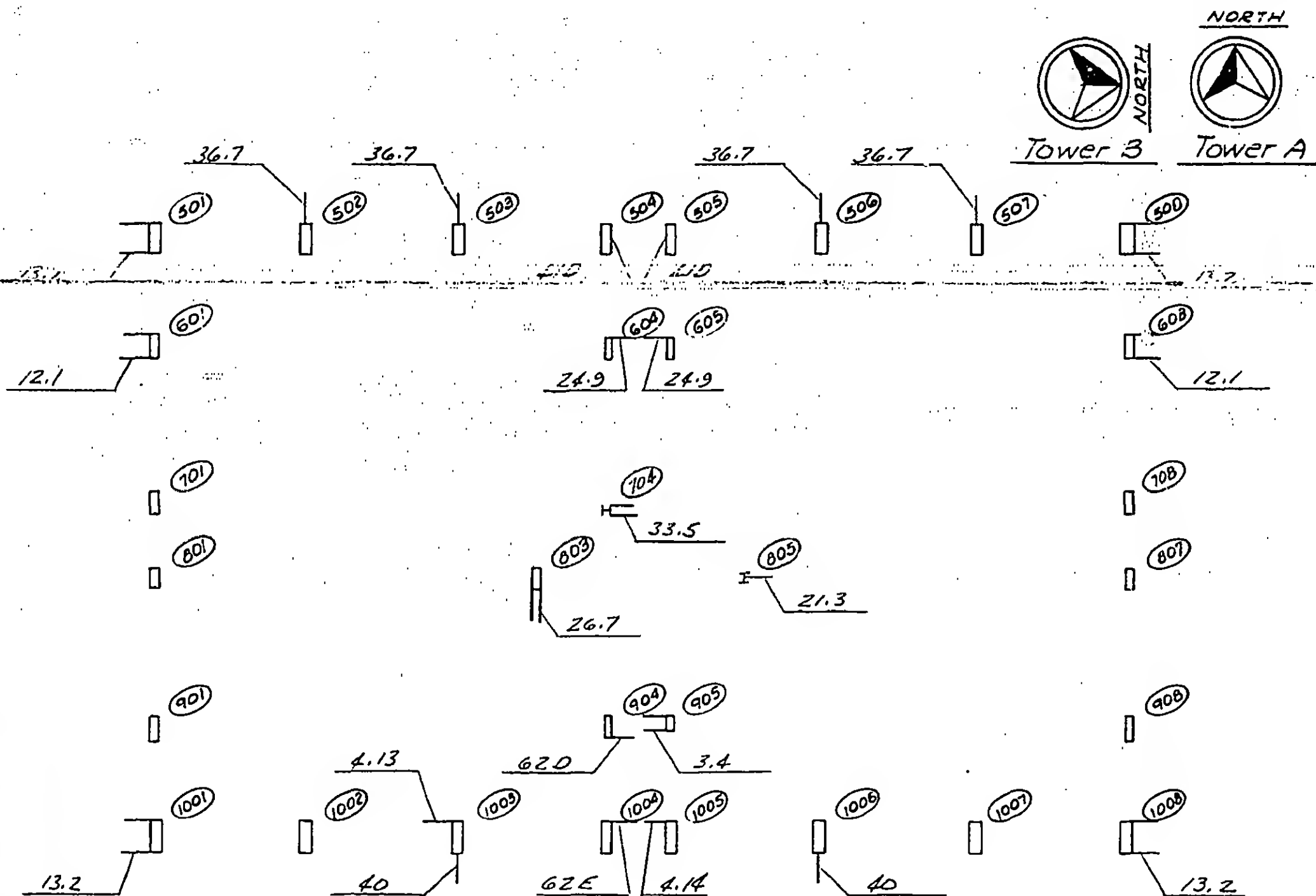
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 74

DATE 4-30-69

REVISIONS



17

DESIGNED

J. Adams

W. Brewer

18-ABI-41

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

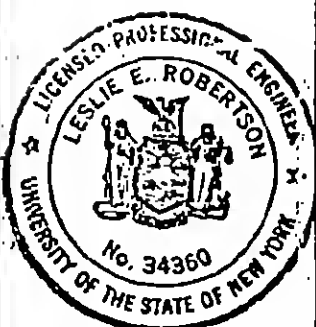
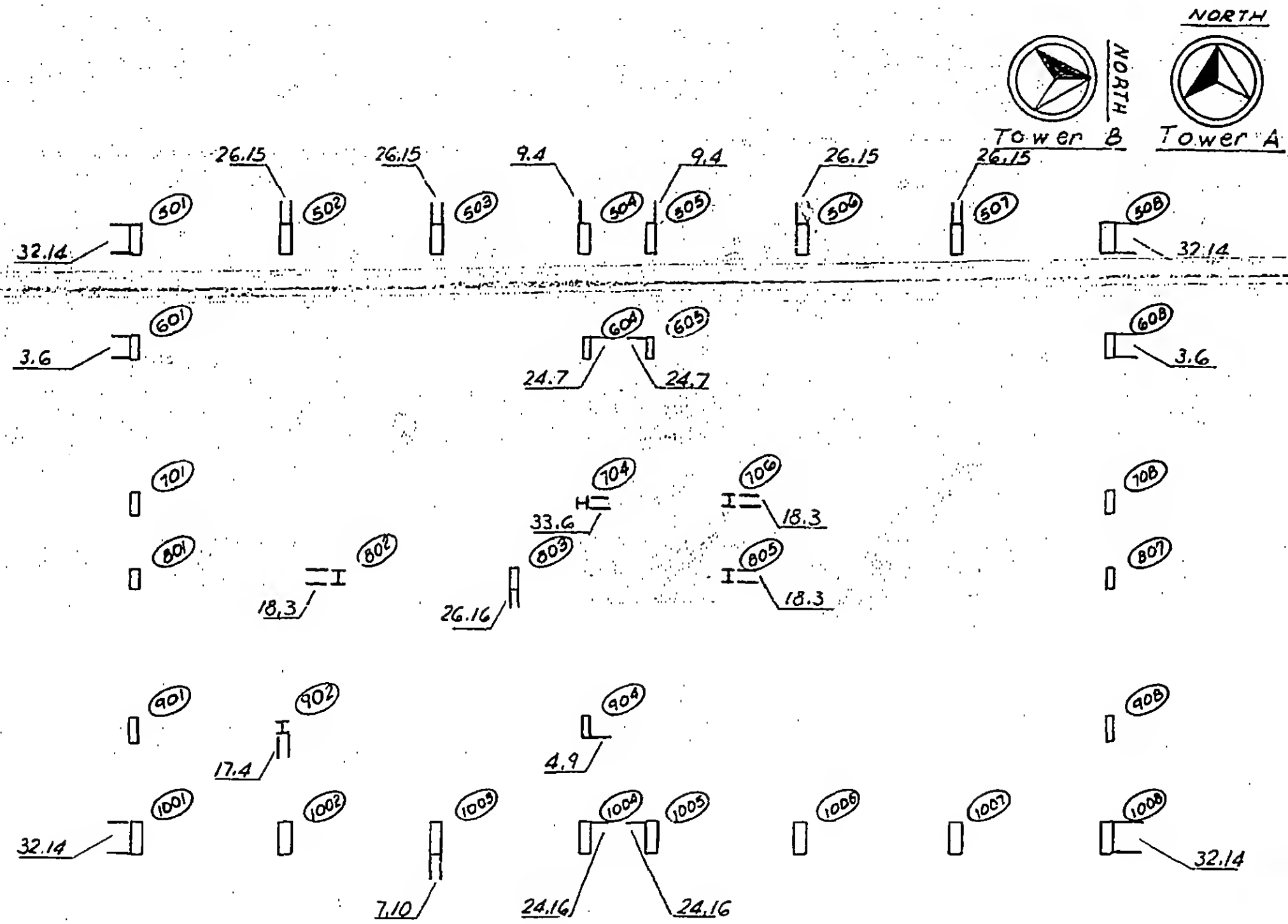
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - KEY PLANS - FLOOR 15

DATE 5-28-69

REVISIONS



DESIGNED

DRAWN

REVIEWED

18-AB1-42

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

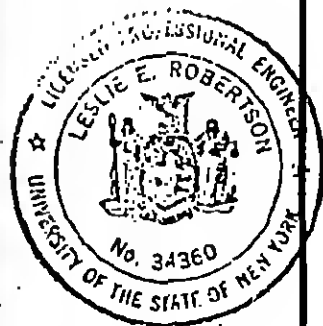
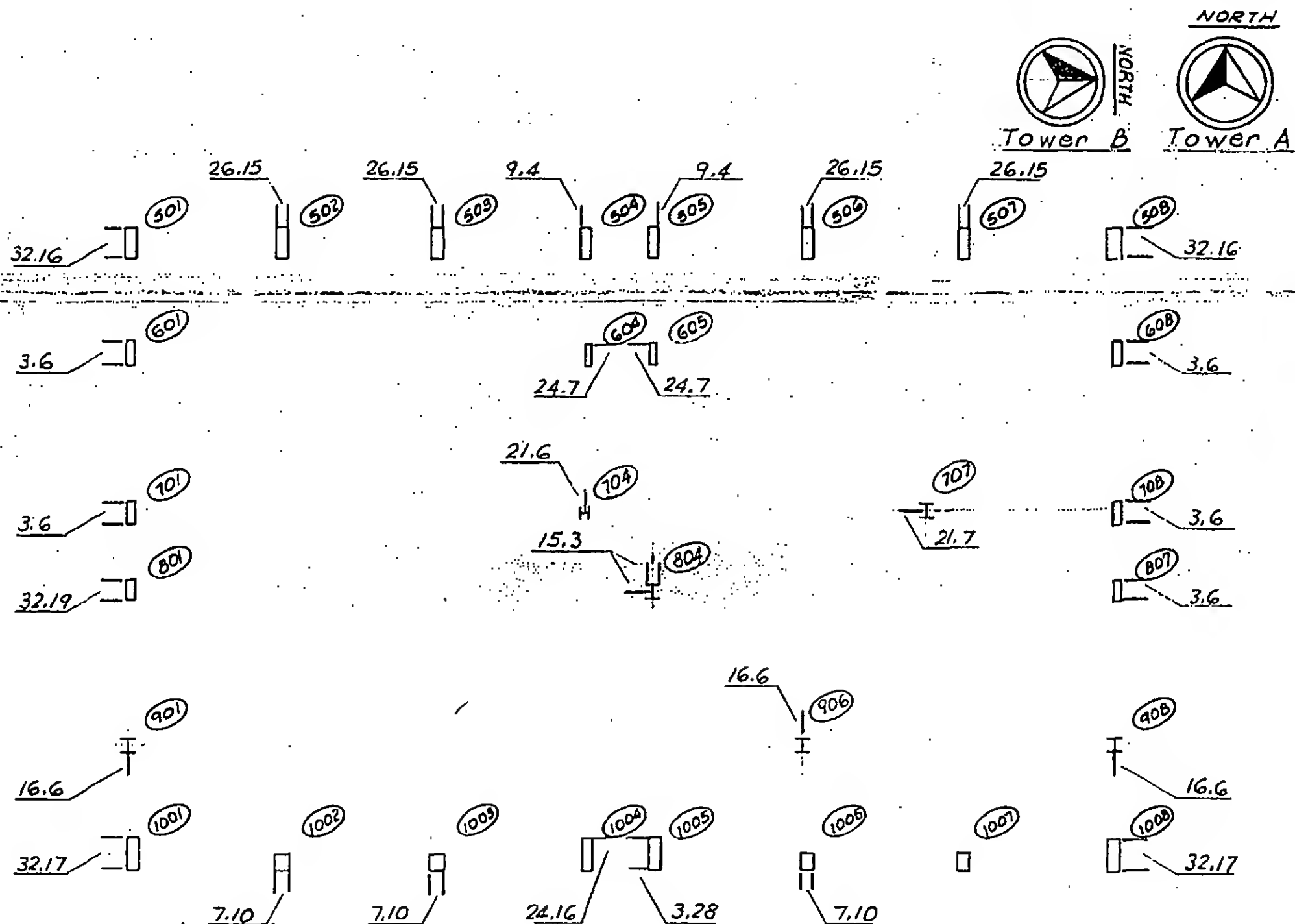
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PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS-KEY PLANS-FLOOR 77

DATE 5-28-69

REVISIONS



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DRAWN

REVIEWED

18-AB1-43

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

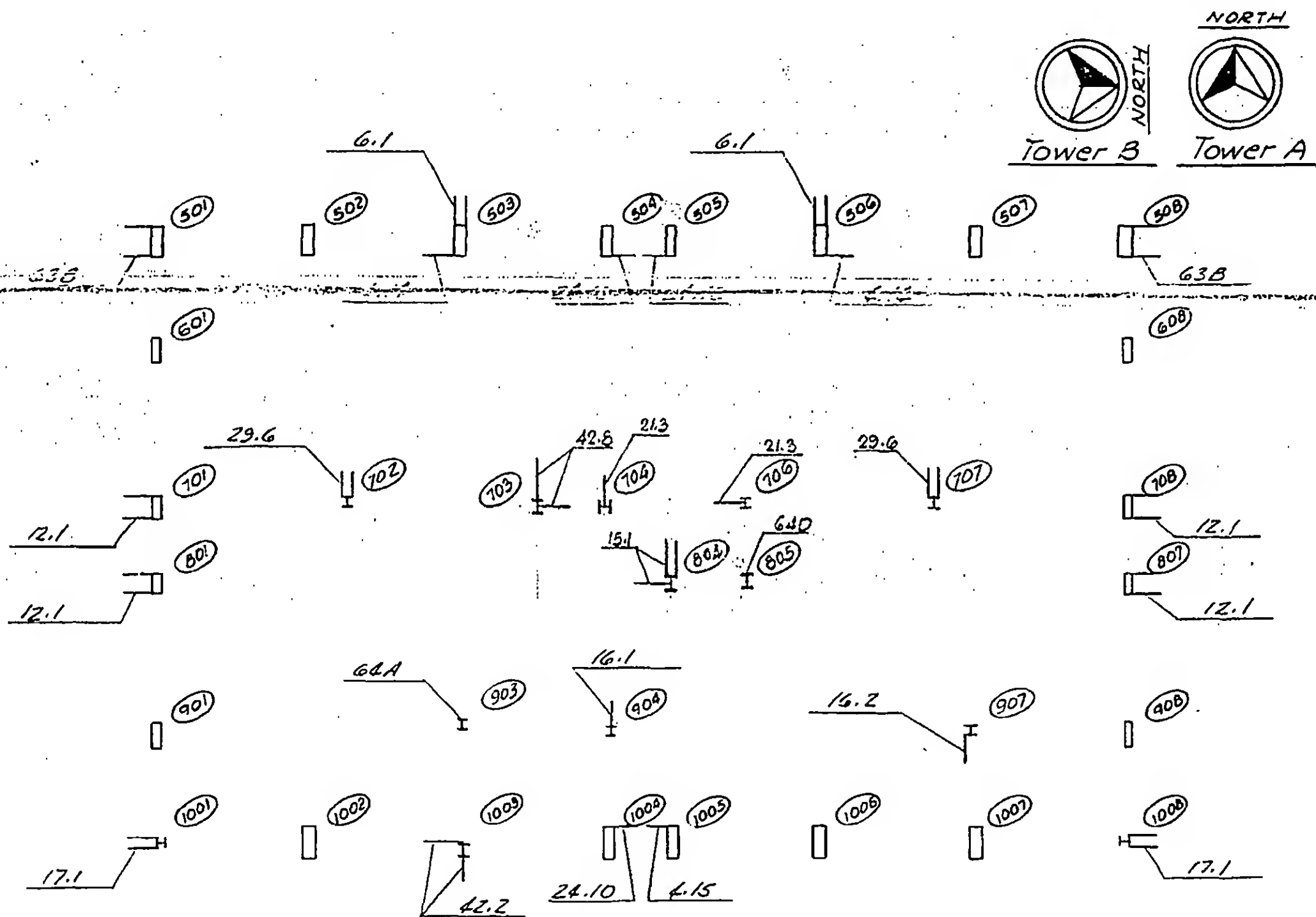
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TITLE KEY PLAN FOR ANCHOR STRAPS-FL 83

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REVISIONS



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REVIEWED (Signature)

18-481-49

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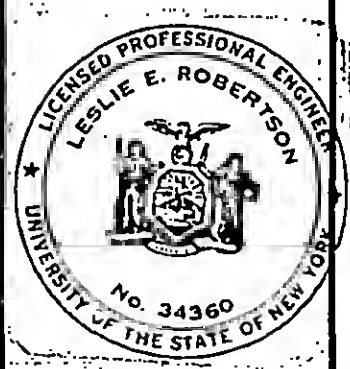
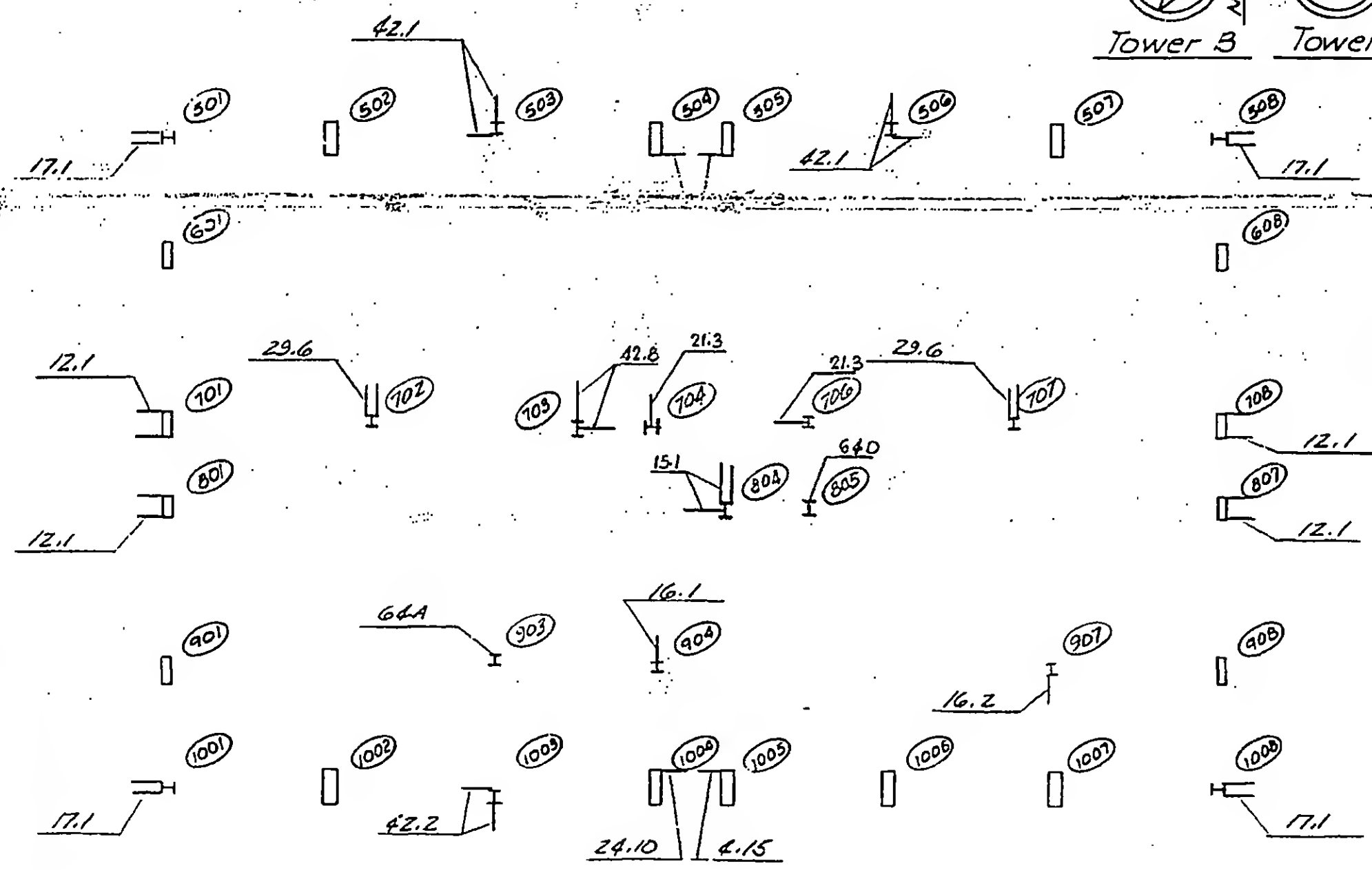
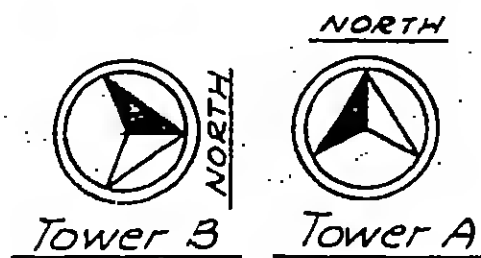
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PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 84-86

DATE 4-30-69

REVISIONS



DESIGNED
DRAWN J. Adams
REVIEWED W. Brewer

18-AB1-50

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

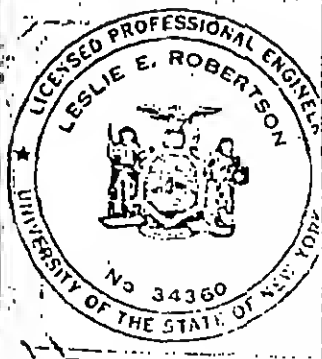
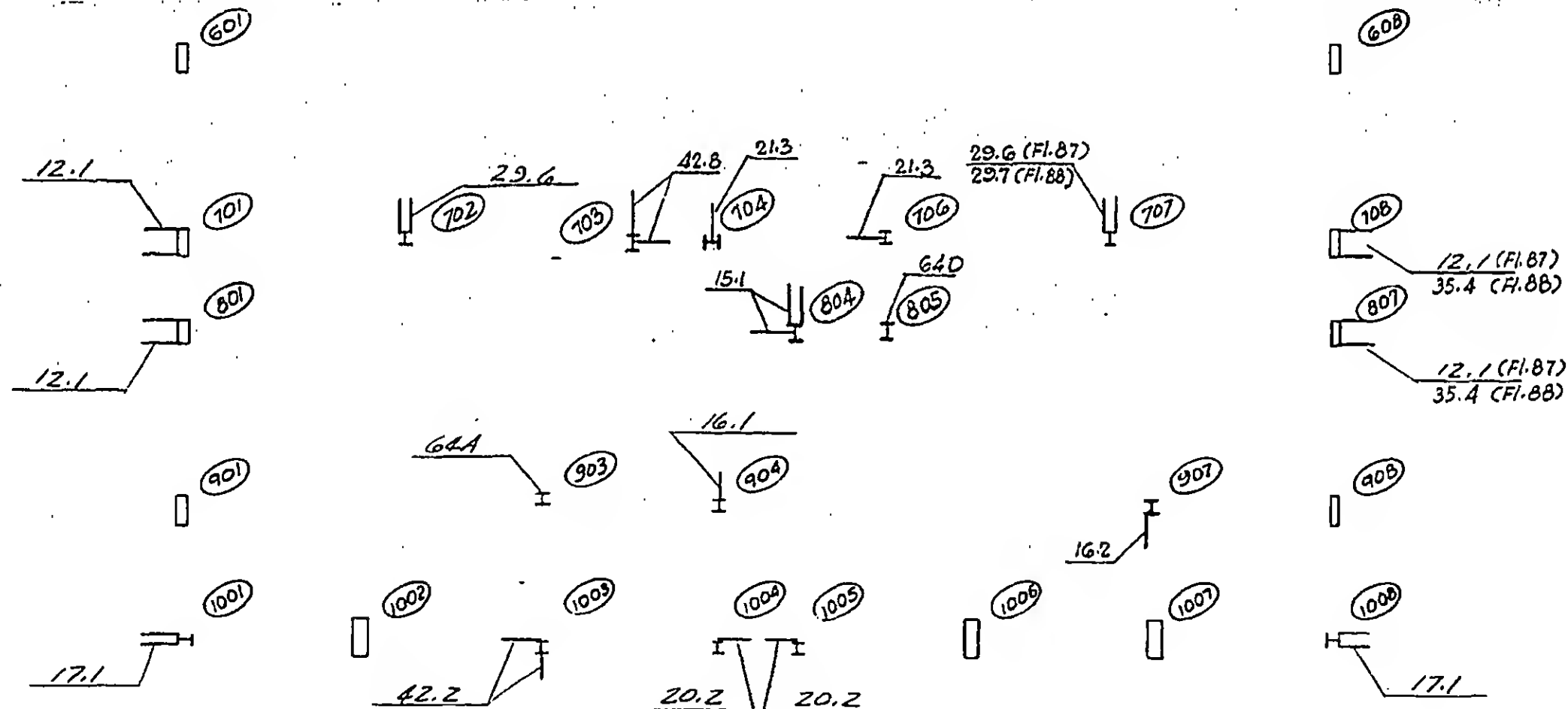
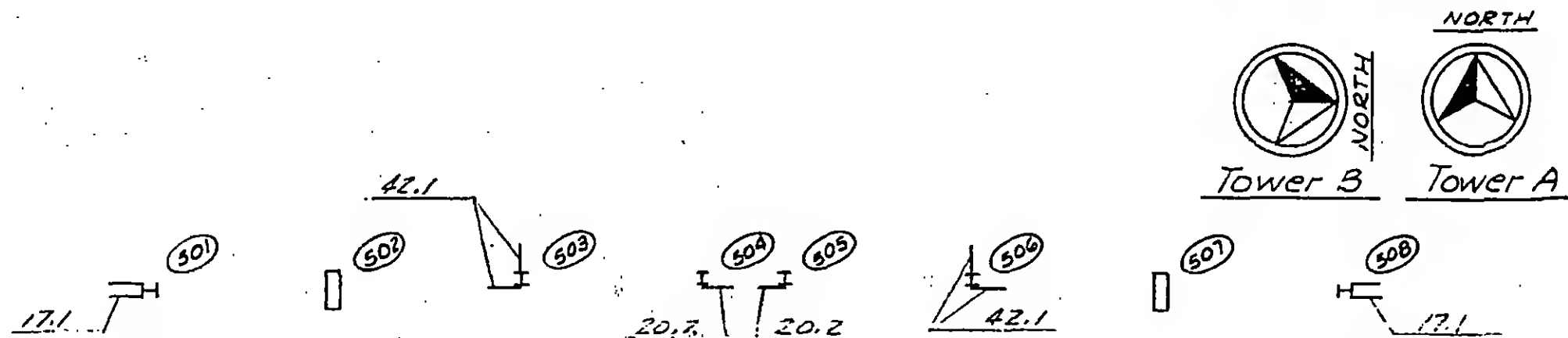
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PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 87-88

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REVISIONS



25

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J. Adams

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W. Brewer

18-AB1-51

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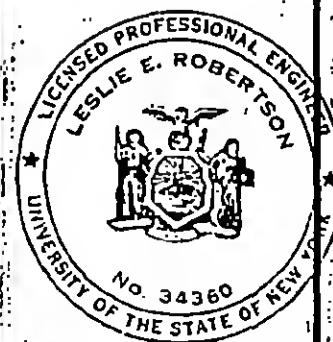
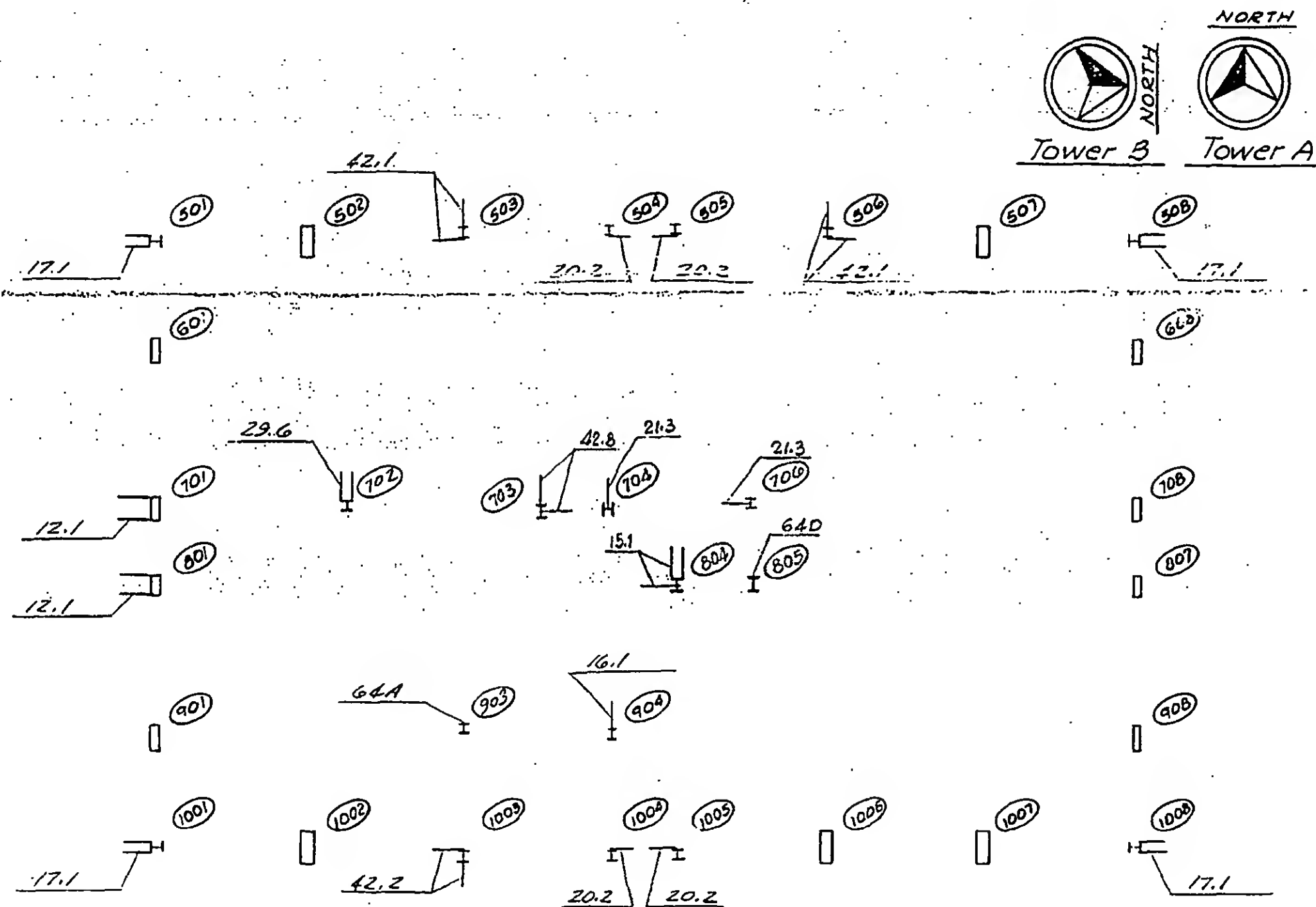
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TITLE KEY PLAN FOR ANCHOR STRAPS-FL 89-92

DATE 4-30-69

REVISIONS



26

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DRAWN

J. Adams

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W. Brewer

18-AB1-52

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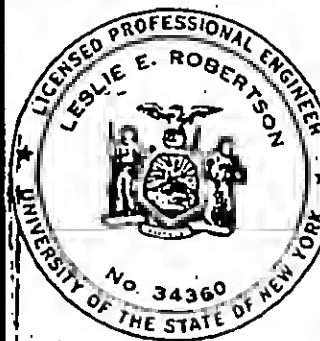
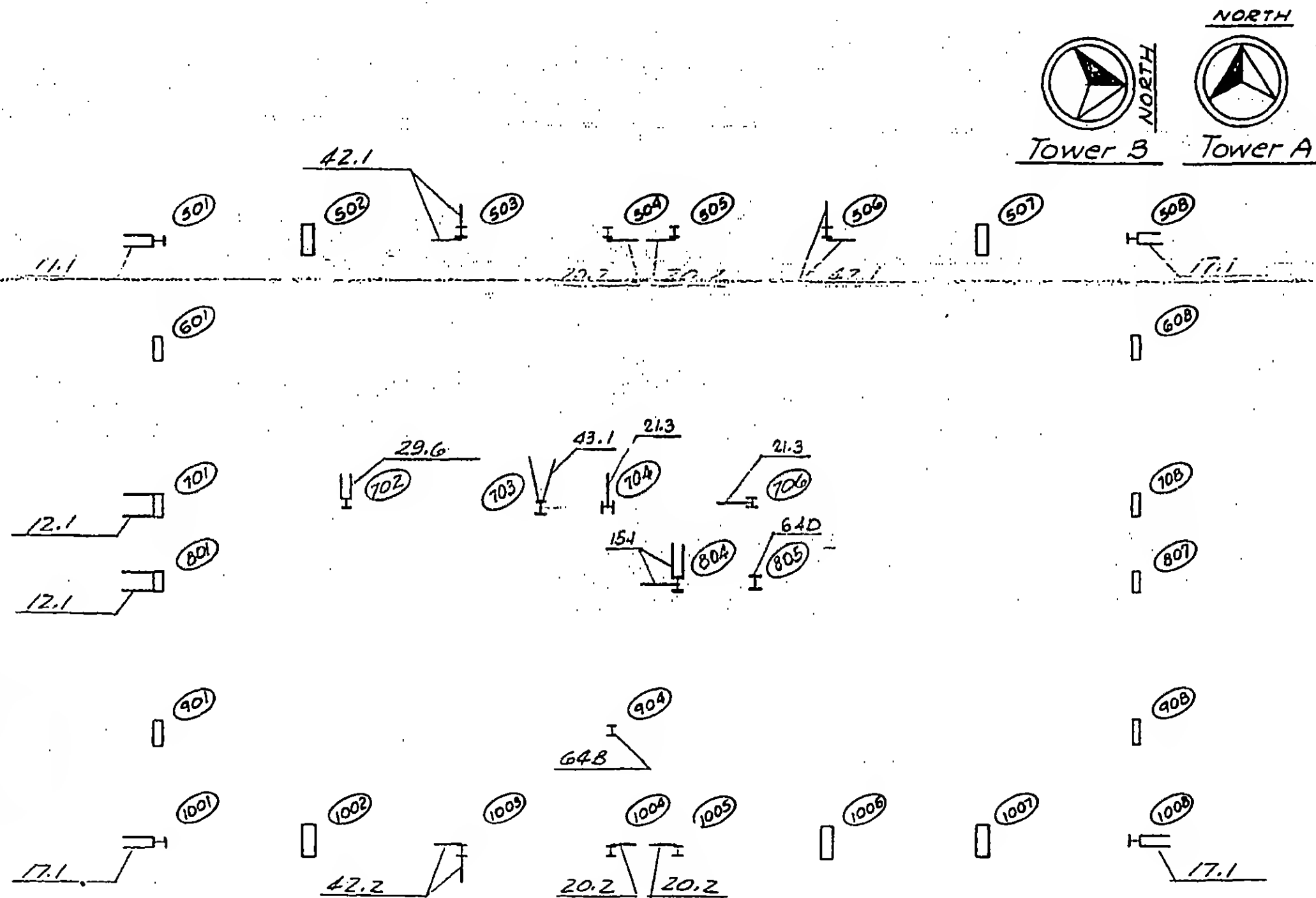
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TITLE KEY PLAN FOR ANCHOR STRAPS- FL 93

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27

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DRAWN

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W. Brewer

18-AB1-53

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

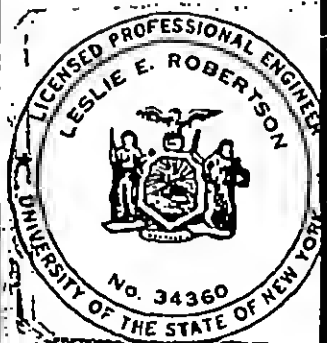
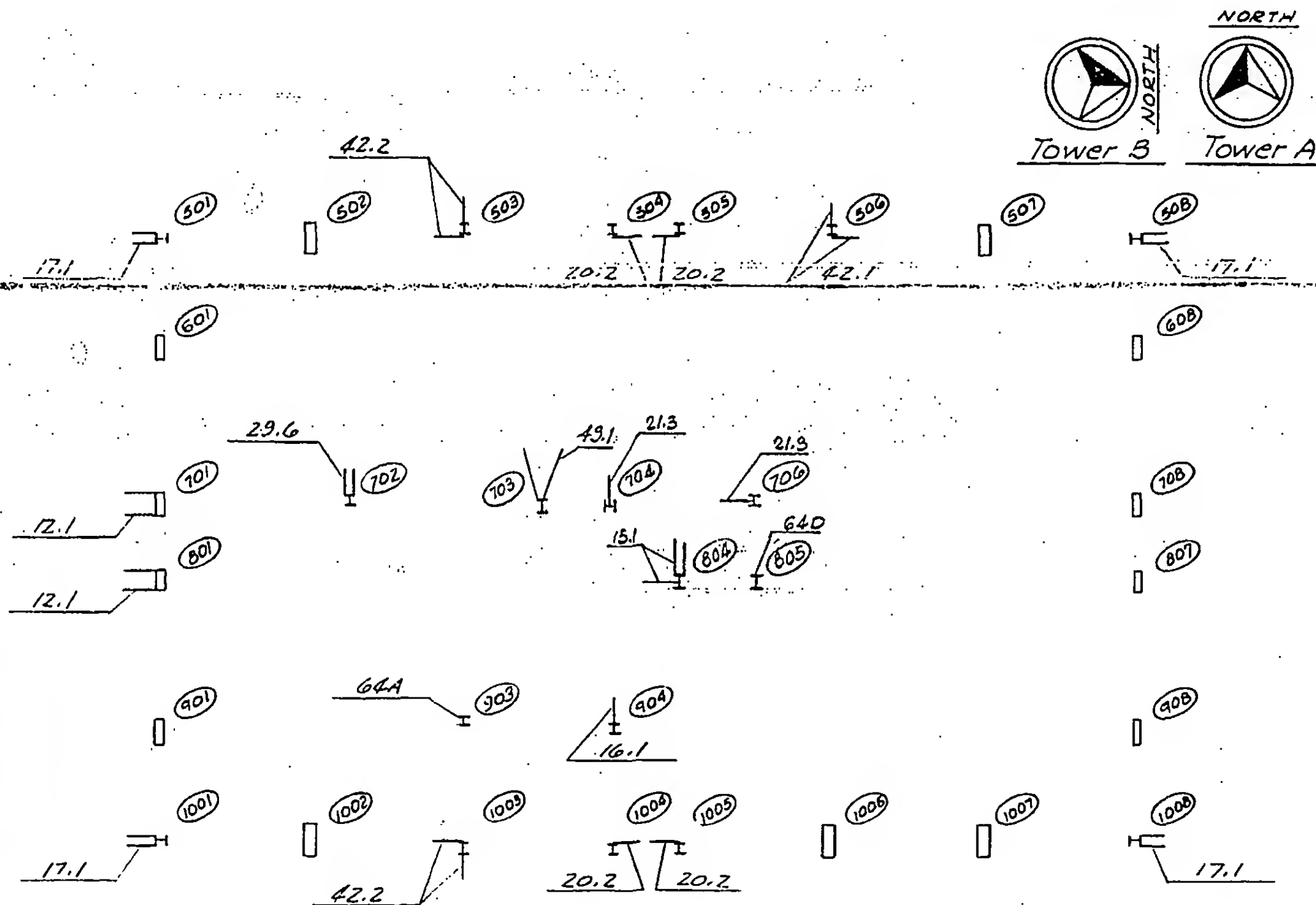
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TITLE KEY PLAN FOR ANCHOR STRAPS-FL 94

DATE 4-30-69

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2F

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J. Adams

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18-AB1-54

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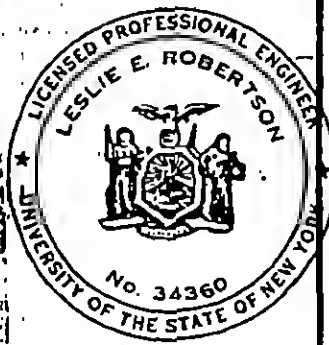
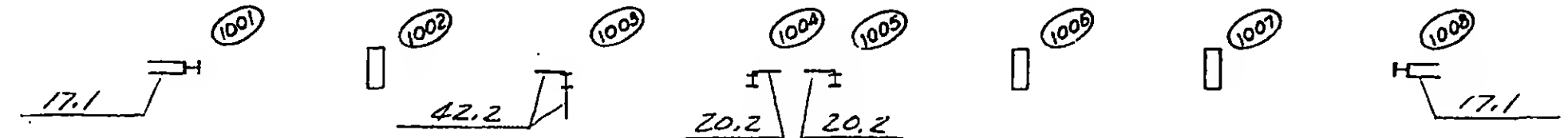
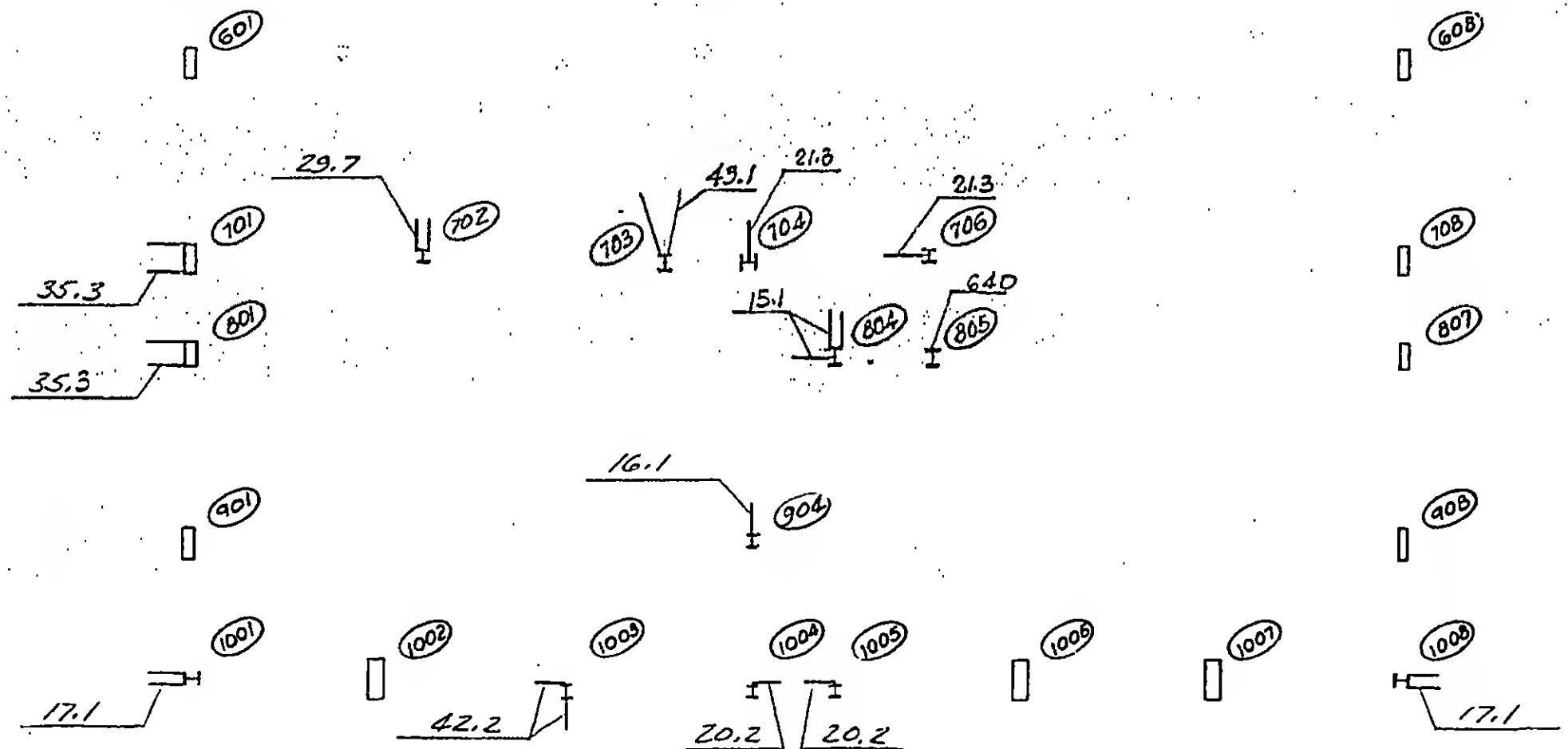
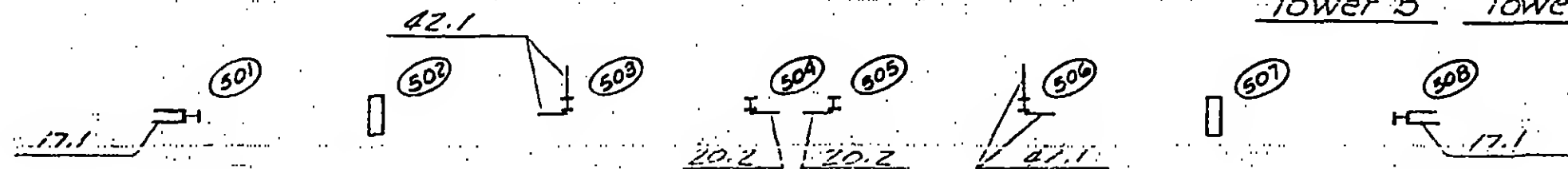
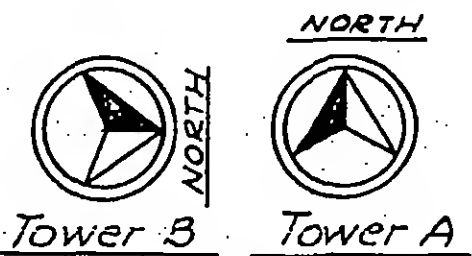
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TITLE KEY PLAN FOR ANCHOR STRAPS-FL. 95

DATE 4-30-69

REVISIONS



25

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J. Adams

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18-ABI-55

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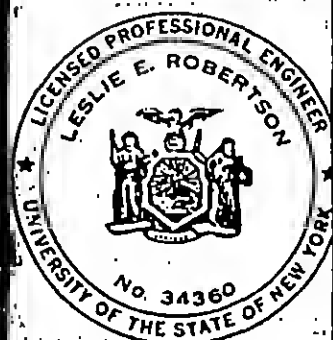
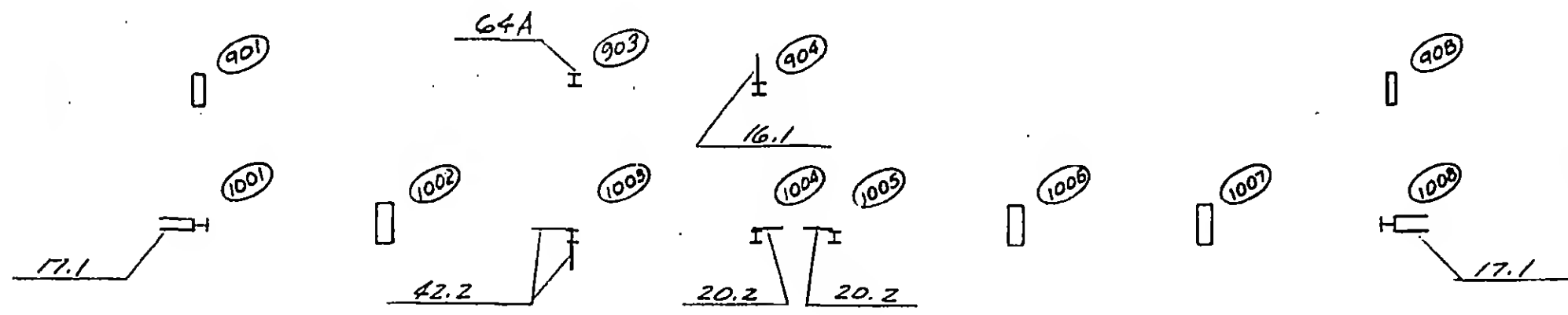
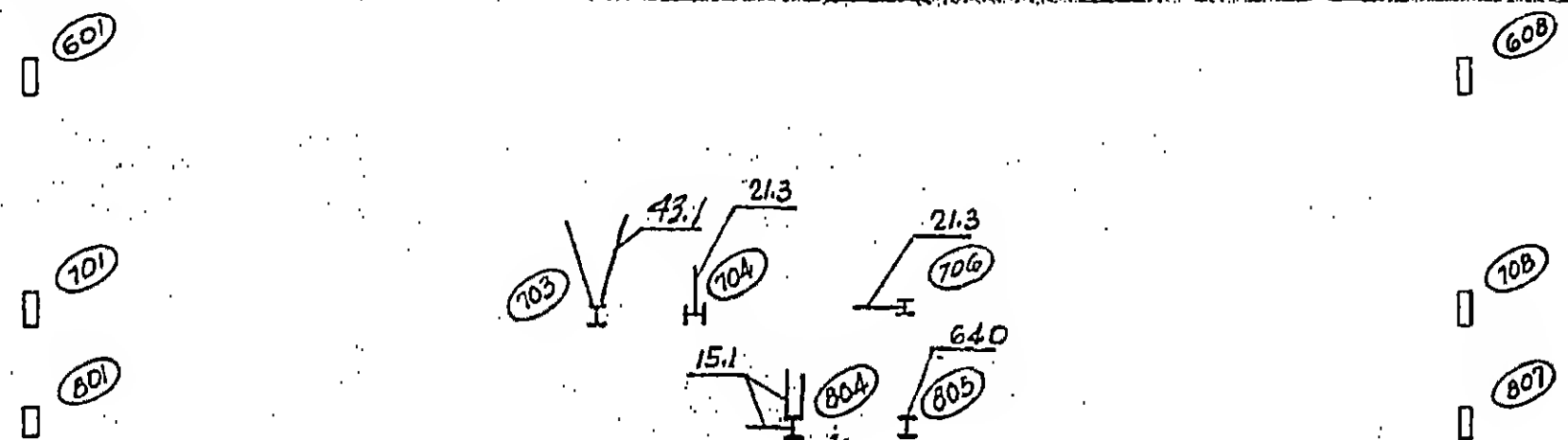
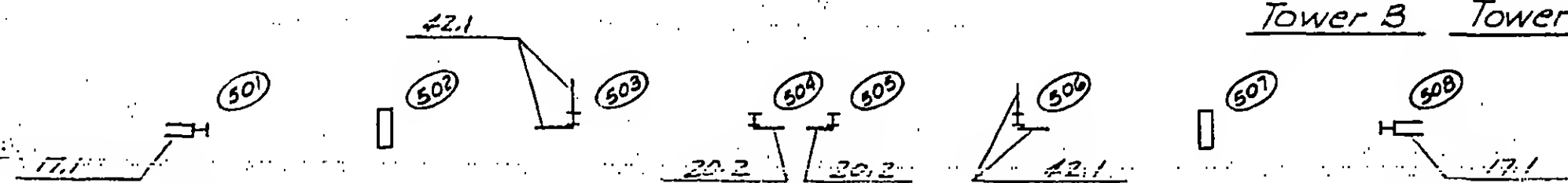
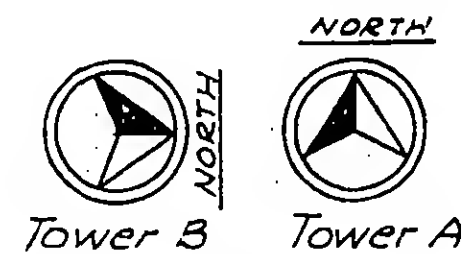
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TITLE KEY PLAN FOR ANCHOR STRAPS-FL 96-100

DATE 4-30-69

REVISIONS



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REVIEWED W. B. Brewer

18-A81-56

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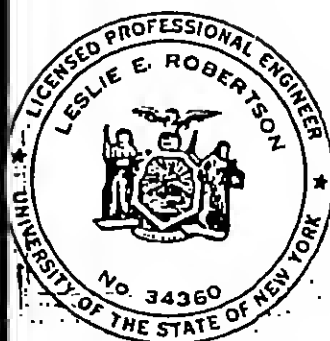
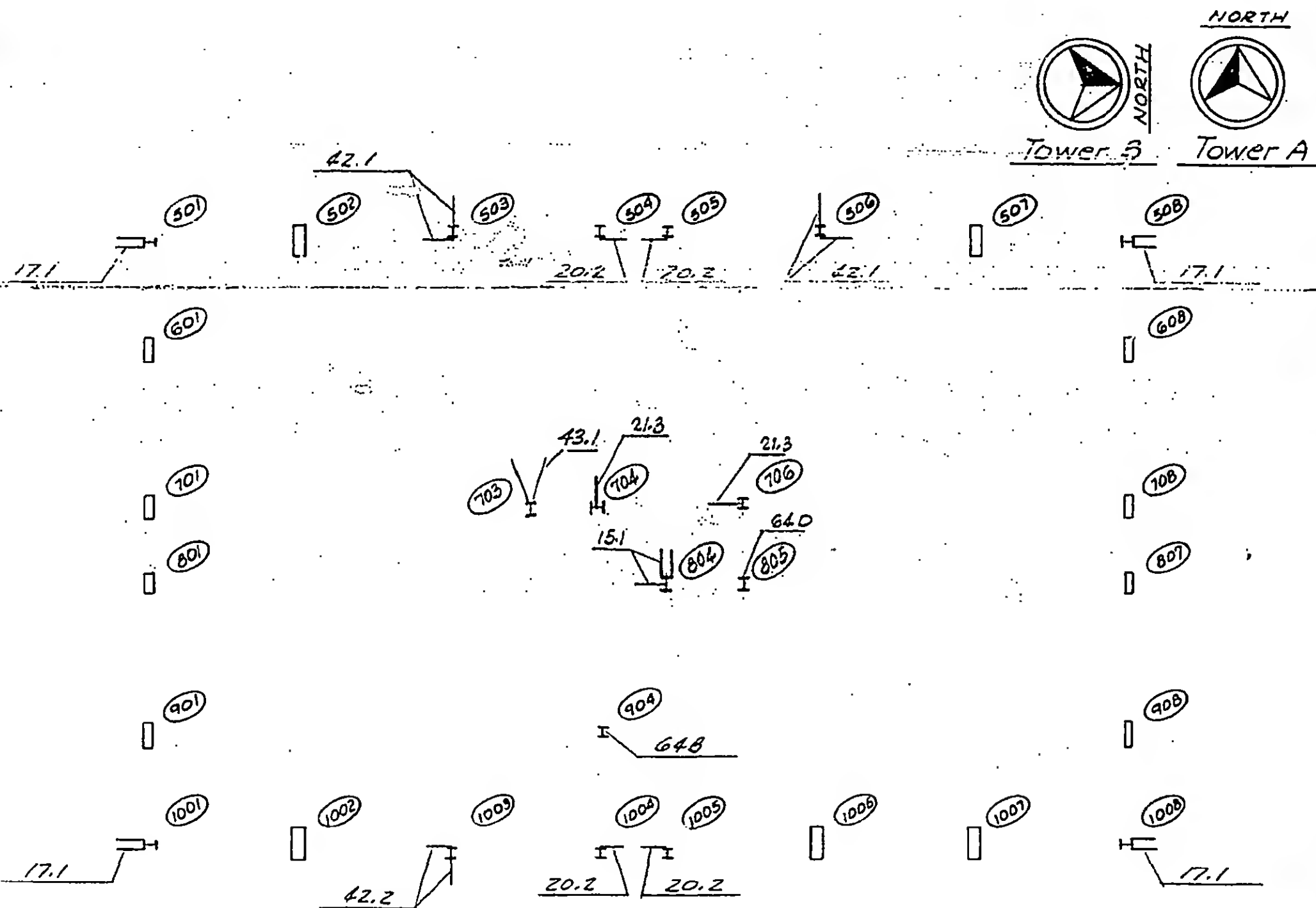
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TITLE KEY PLAN FOR ANCHOR STRAPS - FL 101

DATE 4-30-69

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DRAWN J. Adams

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18-ABI-57

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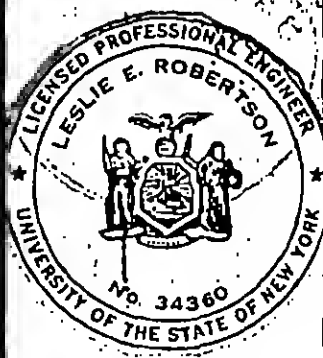
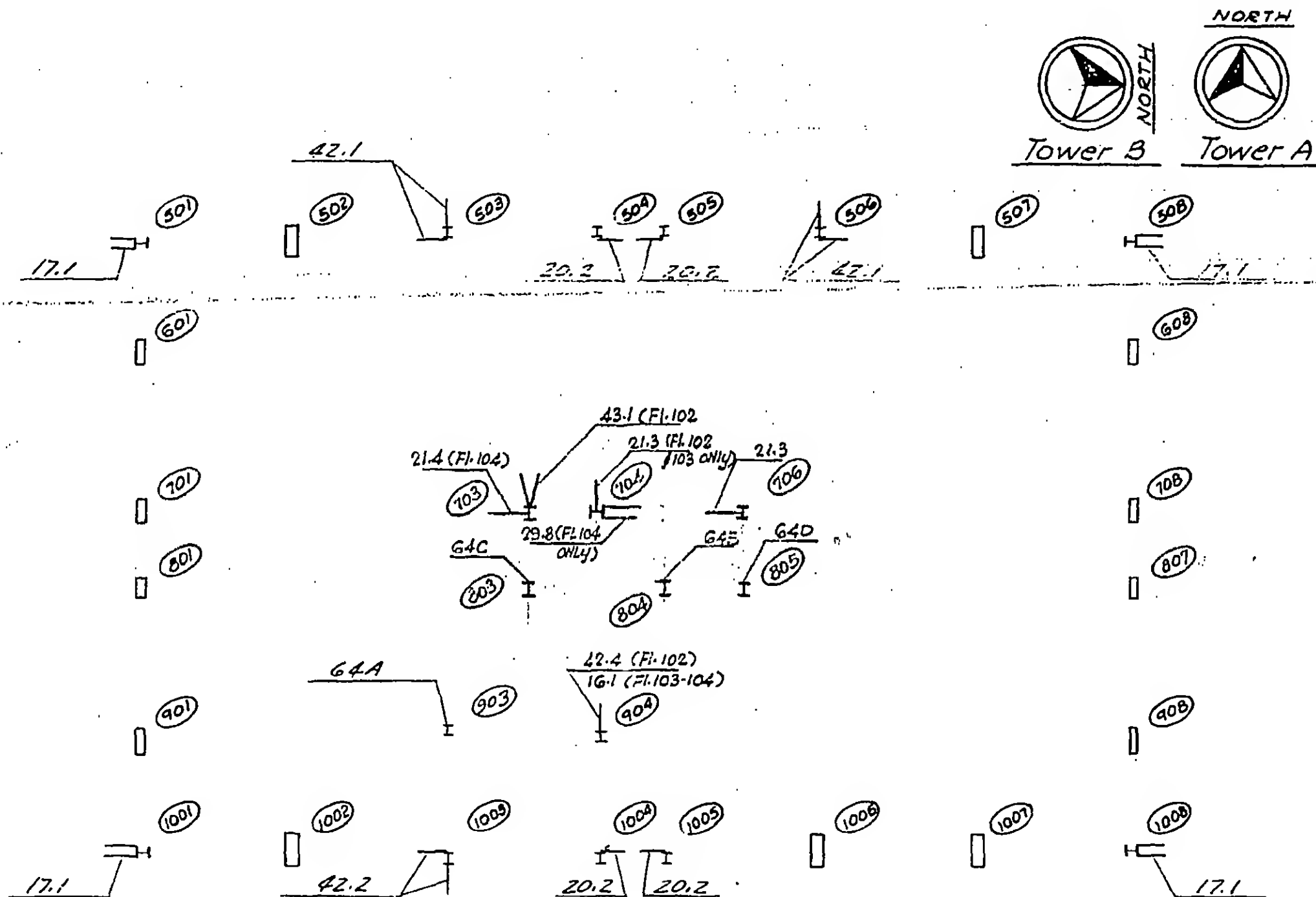
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TITLE KEY PLAN FOR ANCHOR STRAPS-FL 102-104

DATE 4-30-69

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DRAWN J. Adams

REVIEWED W. Brewer

18-AB1-58

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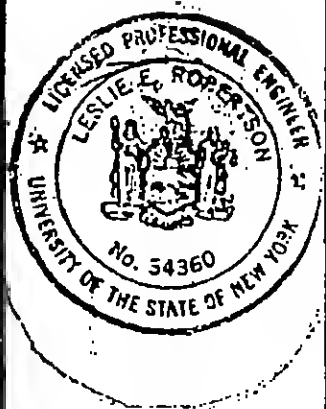
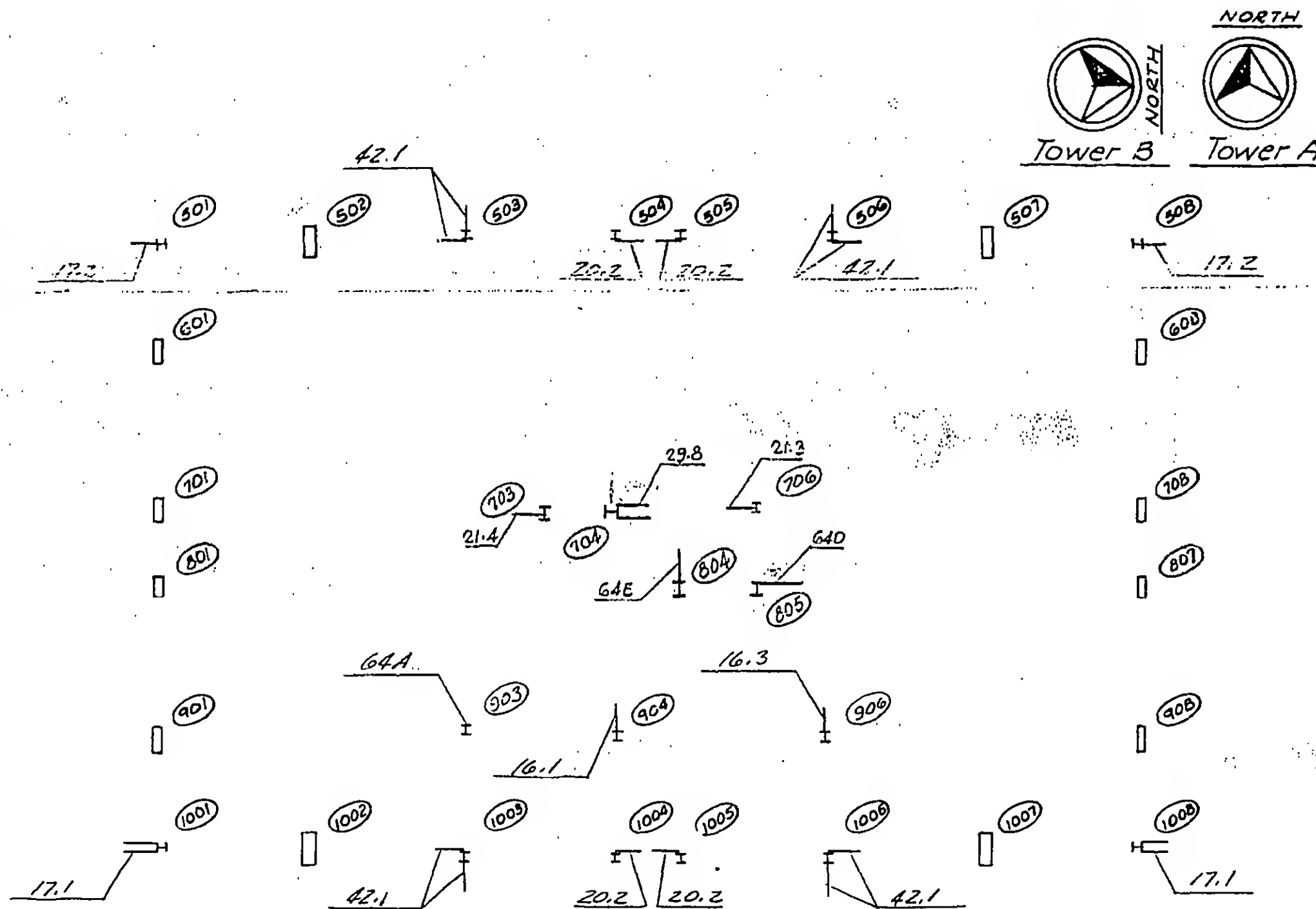
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TITLE KEY PLAN FOR ANCHOR STRAPS - FL 105

DATE 7-14-69

REVISIONS



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18-ABI-59

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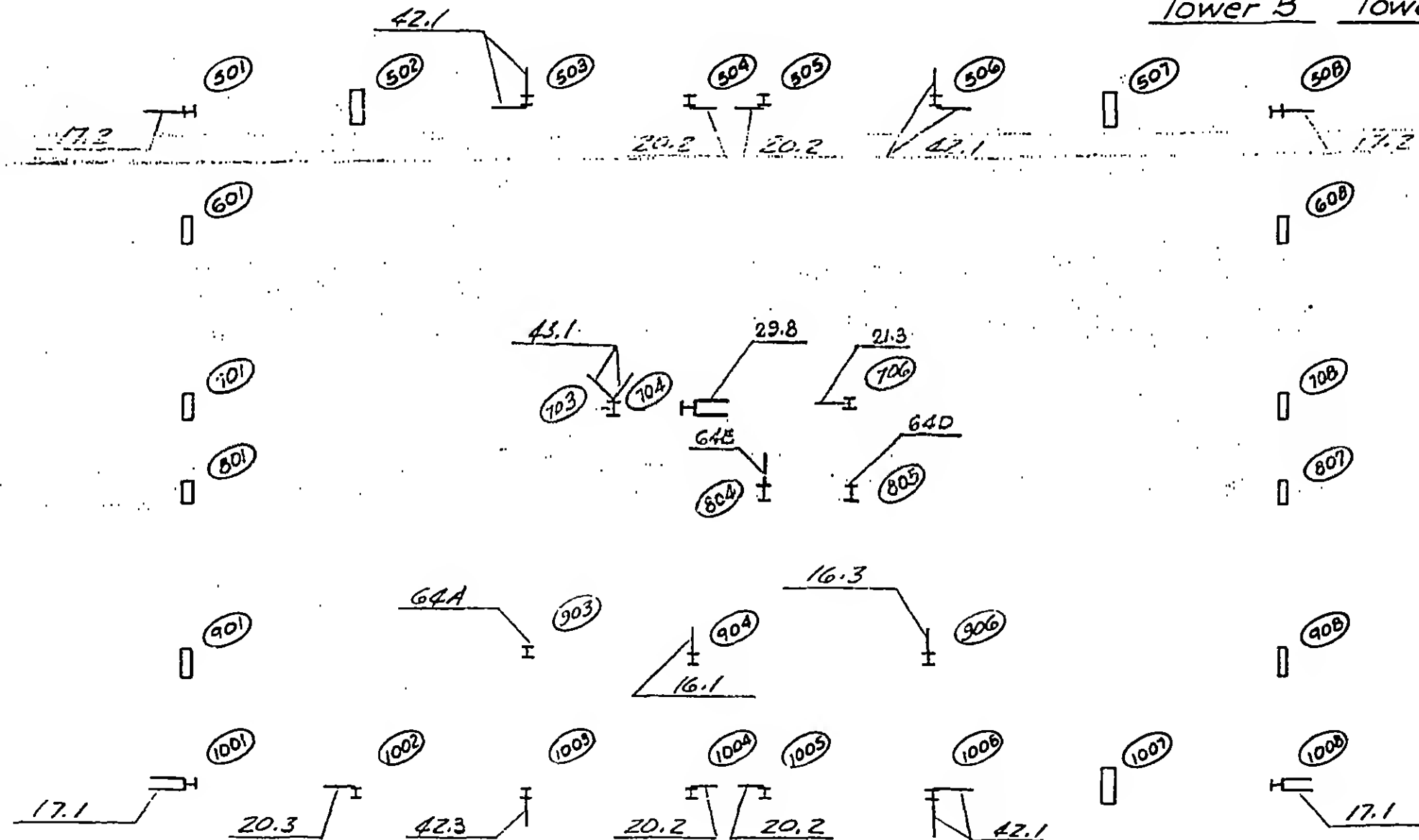
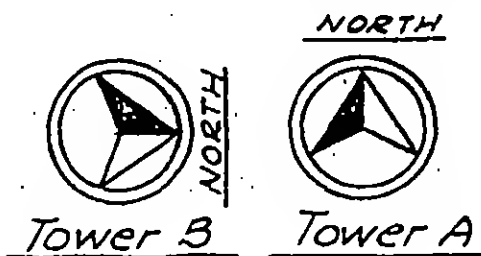
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PROJECT THE WORLD TRADE CENTER

TITLE KEY PLAN FOR ANCHOR STRAPS-FL 106

DATE 7-14-69

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18-AB1-60

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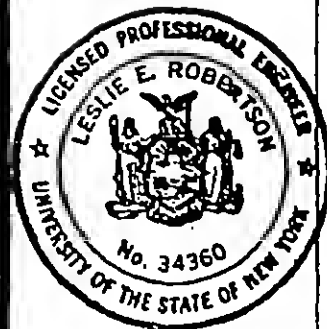
TITLE ANCHOR STRAPS - CORE DETAILS - INDEX

DATE 10/ 1/69

REVISIONS

10/16/68
10/30/68
2/7/69
4/30/69
5/20/69
5/24/69

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| 18-AB2-51.1 | DETAIL 51A | | |



PROJECT

THE WORLD TRADE CENTER

TITLE

STRAP ANCHOR GENERAL NOTES

DATE

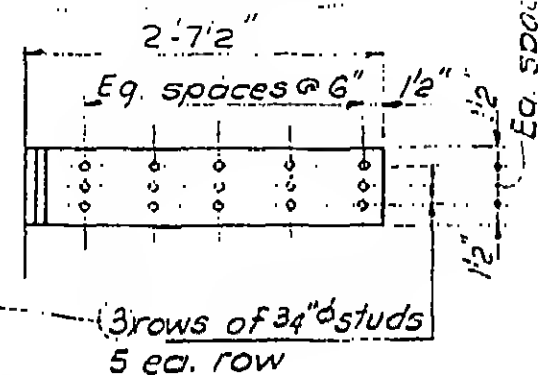
10/16/68

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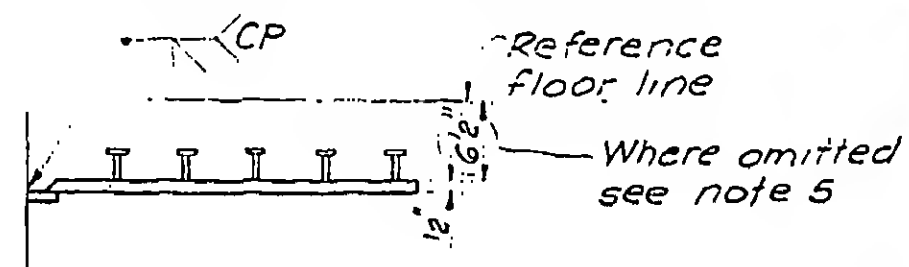
2-7-69

1. Straps and back up material to be ASTM A36.
2. All welding to be with E70xx low hydrogen electrodes.
3. Back up material for complete penetration welding not to exceed 1" x 1/4".
4. Stud lengtha see table A
5. Straps rest on steel framing members unless noted (\pm), measured from reference floor line to top of strap.
6. Strap notation $\overbrace{6 \times 1/2 \times 2-7/2}^{\text{strap}} \overbrace{3 \times 5/3/4}^{\text{studs}} \overbrace{(-6'2)}^{\text{strap elevation}}$

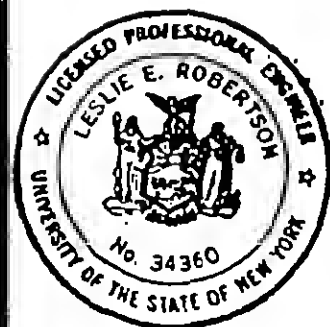
When omitted
only one row
required. Center
on strap.



| Table A | | |
|-----------|-------------|---------------------------|
| Stud Size | Stud length | Shop Dwg Stud Designation |
| 1/2 | 2 | R 420 |
| 5/8 | 2 1/2 | R 524 |
| 3/4 | 3 | R 630 |
| 7/8 | 3 1/2 | R 734 |



7. See 18-AB1 for Key Plans.



DESIGNED

DRAWN

S. Wexler

REVIEWED

W. Brewer

18-AB2-2.1

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TITLE STRAP ANCHORS - CORE - TYPICAL DETAILS

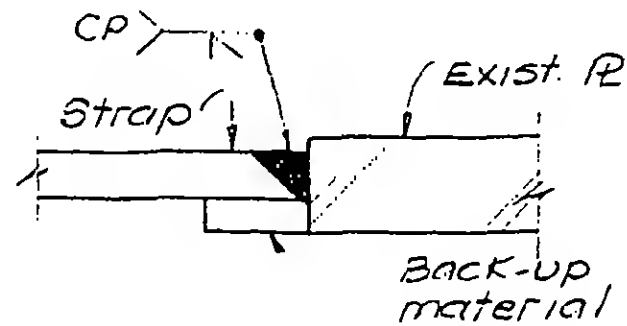
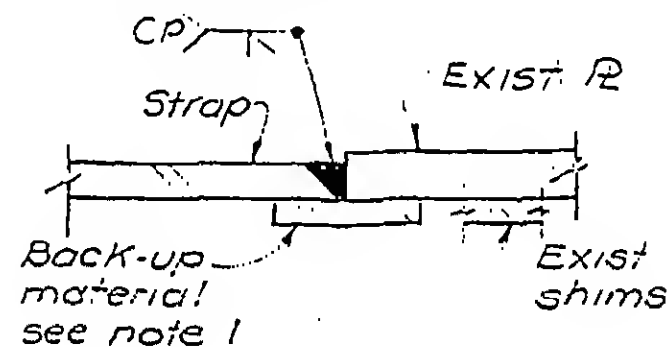
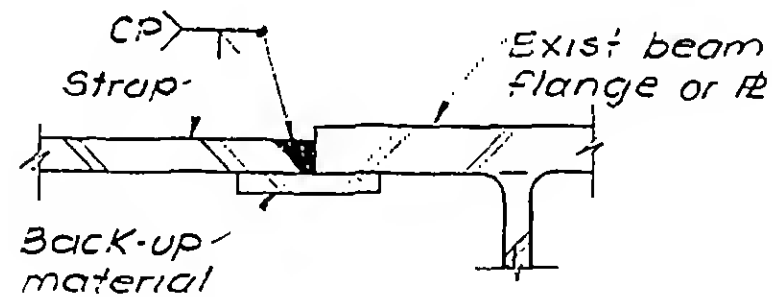
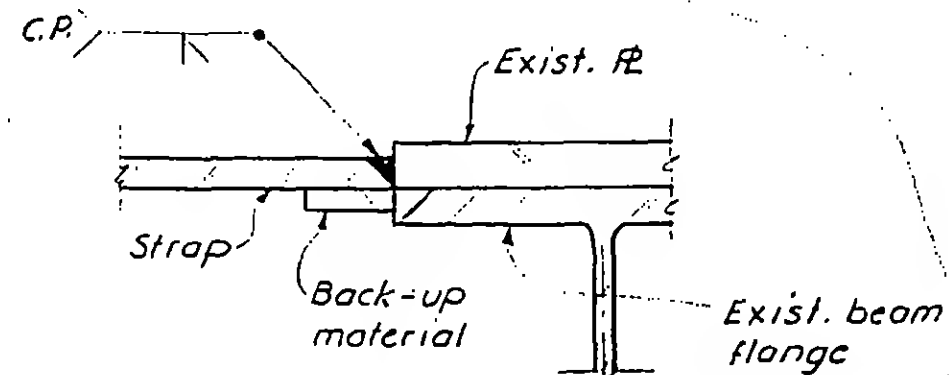
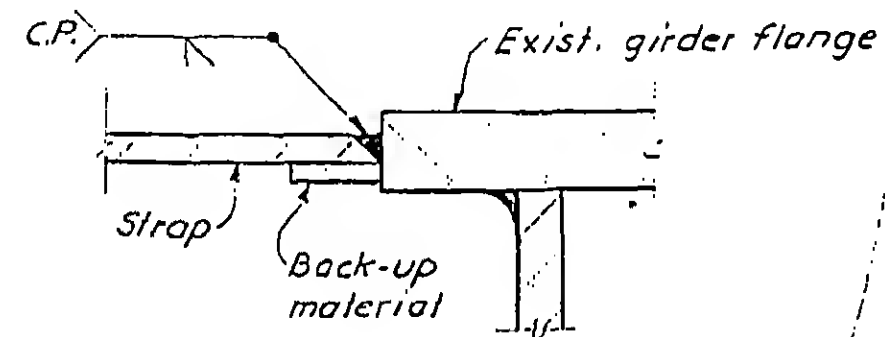
DATE 10/30/68

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12-13-68

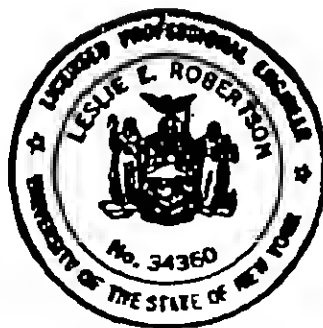
2-7-69

4-30-69

Section a-aSection b-bSection: c-cSection d-dSection e-e

Notes:

1. Back-up material in Section b-b should be shipped loose and field attached to suit existing clearances.



DESIGNED

S. O'Sullivan

DRAWN

S. Wexler

REVIEWED

W. Brewer

18-AB2-2.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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TITLE STRAP ANCHORS - CORE - DETAIL 3

DATE 10/16/68

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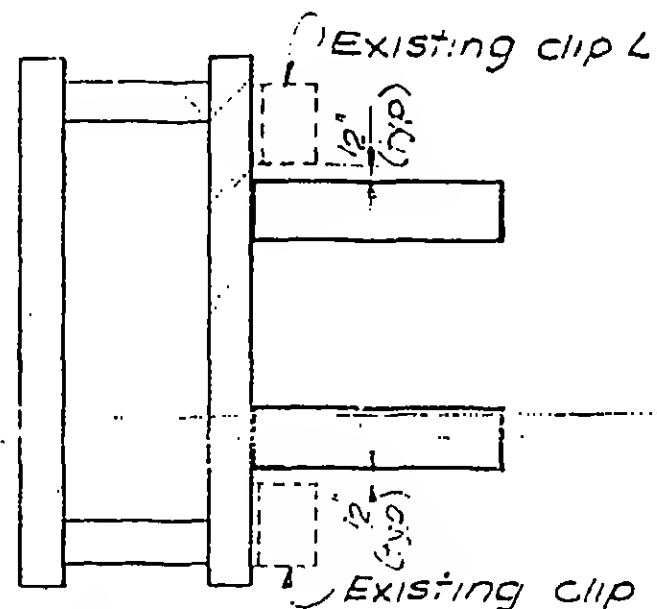
12-13-68

4-30-69

5-20-69

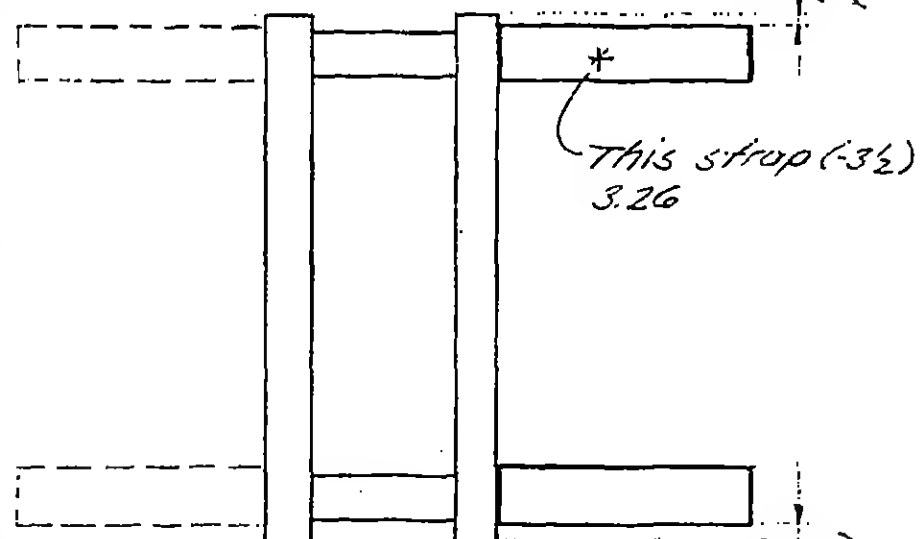
5-28-69

10-1-69



TYPE A

Dim B

Dim A
12" where Dim A
not scheduled

TYPE B

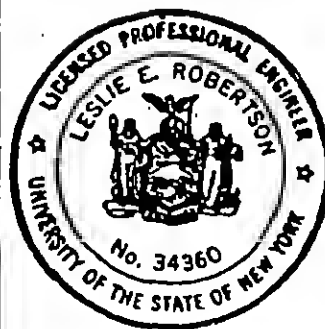
Dim A

Dim B
12" where Dim B
not scheduled

See Note 6 - 18-AB2-2

| Detail No | Strap | Studs | Elev | Dim. A | Dim. B | Type |
|-----------|-------------|--------|------------------|-----------|--------|------|
| 3.1 | 4x1/2x2-1/2 | 4/34 | (-9 3/4) | — | — | A |
| 3.2 | 4x1/2x1-7/2 | 3/34 | (-9 3/4) | — | — | A |
| 3.3 | 3x3/8x1-7/2 | 3/58 | (-4) | — | — | B |
| 3.4 | 3x3/8x1-7/2 | 3/58 | (-4) | — | — | B |
| 3.5 | 6x1/2x2-1/2 | 4/18 | (-4) | — | 1 1/2 | B |
| 3.6 | 3x3/8x1-7/2 | 3/58 | — | — | — | A |
| 3.7 | 4x3/8x2-1/2 | 4/58 | (-3 3/8) | — | — | A |
| 3.8 | 6x1/2x2-7/2 | 2x5/58 | (-3 1/4) | 1'-3 1/2" | 10 | B |
| 3.9 | 4x1/2x2-7/2 | 5/58 | (-3 1/4) | — | — | A |
| 3.10 | 4x3/4x4-1/2 | 8/58 | (-3) | — | — | A |
| 3.11 | 6x3/4x3-7/2 | 2x7/58 | (-3) | — | — | A |
| 3.12 | 4x3/8x2-1/2 | 4/58 | — | — | — | A |
| 3.13 | 4x3/4x4-1/2 | 8/58 | — | — | — | A |
| 3.14 | 4x1/2x2-1/2 | 4/34 | (-7) | — | — | A |
| 3.15 | 4x1/2x1-7/2 | 3/34 | — | — | — | A |
| 3.16 | 4x3/4x2-1/2 | 4/58 | — | — | — | A |
| 3.17 | 4x1/2x3-6 | 6/58 | (-3 1/2) | — | — | B |
| 3.18 | 8x1/2x4-6 | 8/34 | (-3 1/2) | — | — | B |
| 3.19 | 4x1/2x3-6 | 6/58 | (-5 3/4) | — | — | A |
| 3.20 | 4x1/2x3-6 | 6/58 | (-3 1/2) | — | — | A |
| 3.21 | 4x3/4x3-0 | 5/34 | (-3 3/4) | — | — | B |
| 3.22 | 4x1/2x2-6 | 4/34 | (-4) | — | — | B |
| 3.23 | 4x1/2x2-6 | 4/34 | (-7 1/2) | — | — | B |
| 3.24 | 4x3/4x4-1/2 | 8/58 | (-3) | — | — | A |
| 3.25 | 10x1/2x3-6 | 2x6/34 | (-4) | — | — | B |
| 3.26 | 10x1/2x3-6 | 2x6/34 | (-4) / (-3 1/2)* | — | — | B |
| 3.27 | 4x1/2x3-6 | 2x6/58 | (-3 1/4) | — | — | A |
| 3.28 | 3x3/8x1-7/2 | 3/58 | (-7 5/8) | — | — | B |
| 3.29 | 5x3/4x3-6 | 6/78 | (-5 1/4) | — | — | B |
| 3.30 | 4x1/2x3-6 | 6/58 | (-5 1/2) | — | — | B |
| 3.31 | 8x1/2x3-0 | 2x5/34 | (-3 1/2) | — | — | B |

18-AB2-3



34

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TITLE

STRAP ANCHORS - CORE - DETAIL 4

DATE

10/30/68

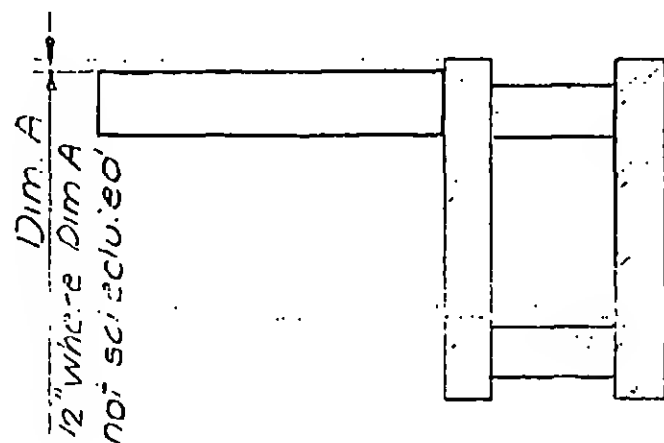
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12-13-68

4-30-69

5-20-69

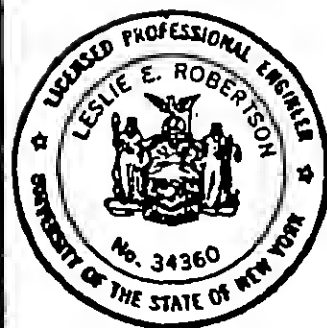
10-1-69



See Note 6 - 18-AB2-2

| Detail No | Strap | Studs | Elev | Dim. A |
|-----------|-------------------|--------|----------|--------|
| 4.1 | 4"x12"x2'-1 1/2" | 4/34 | — | — |
| 4.2 | 3"x3/8"x1'-7 1/2" | 3/58 | (-4 3/8) | — |
| 4.3 | 5"x3/4"x5'-1 1/2" | 10/58 | (-3) | 10" |
| 4.4 | 4"x12"x3'-5" | 7/58 | (-5 3/4) | 2 |
| 4.5 | 3"x3/8"x1'-7 1/2" | 3/58 | (-6 1/8) | — |
| 4.6 | 3"x12"x2'-1 1/2" | 4/34 | (-6 1/2) | — |
| 4.7 | 3"x3/8"x1'-7 1/2" | 3/58 | (-3 5/8) | — |
| 4.8 | 3"x12"x2'-7 1/2" | 5/58 | (-4) | — |
| 4.9 | 4"x12"x1'-7 1/2" | 3/34 | (-7 1/2) | — |
| 4.10 | 3"x3/4"x2'-1 1/2" | 4/34 | (-7 1/4) | — |
| 4.11 | 3"x3/8"x1'-7 1/2" | 3/58 | (-4) | 5 |
| 4.12 | 3"x3/8"x1'-7 1/2" | 3/58 | (-7 5/8) | — |
| 4.13 | 6"x12"x3'-1 1/2" | 6/34 | (-4) | — |
| 4.14 | 4"x12"x2'-1 1/2" | 4/34 | (-3 1/2) | — |
| 4.15 | 3"x3/8"x2'-1 1/2" | 4/58 | (-4 1/8) | — |
| 4.16 | 3"x3/8"x2'-1 1/2" | 4/58 | (-6 5/8) | — |
| 4.17 | 4"x12"x2'-6" | 4/34 | (-5 1/2) | — |
| 4.18 | 4"x12"x3'-5" | 7/58* | (-5 3/4) | 1" |
| 4.19 | 6"x12"x5'-0" | 2x5/58 | (-3) | 1" |

* @ 5 1/2"



35

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18-AB2-4

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TITLE STRAP ANCHORS - CORE - DETAIL 5

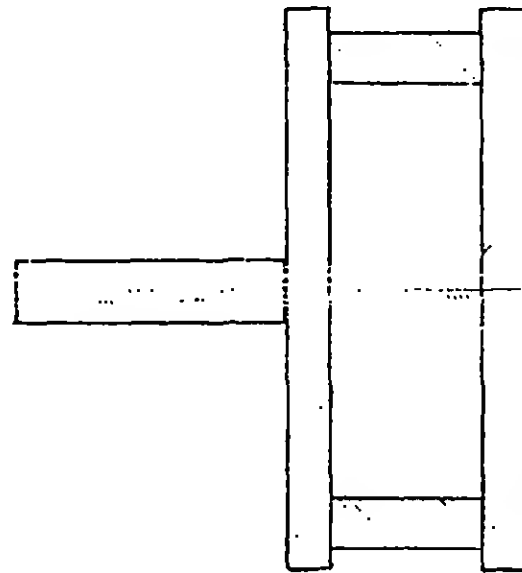
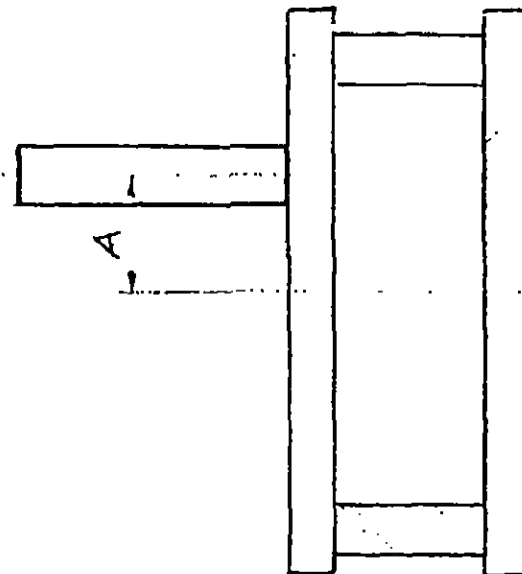
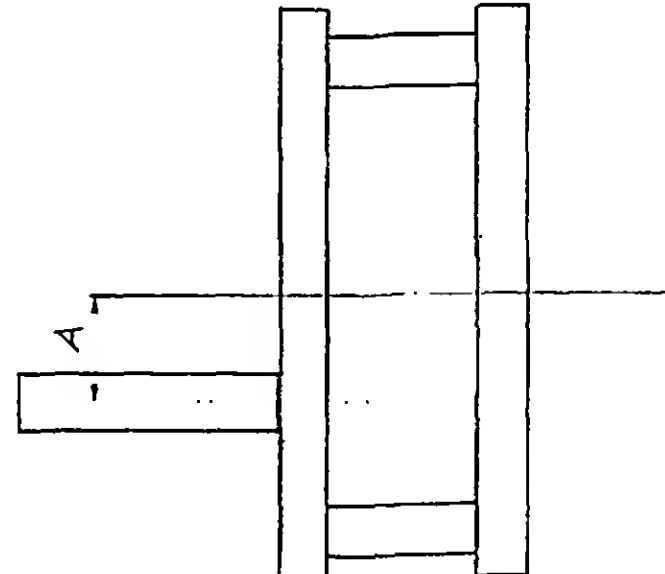
DATE 10/30/68

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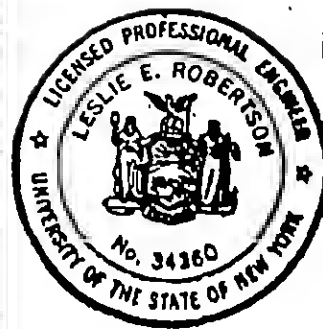
4-30-69

5-20-69

5-28-69

TYPE ATYPE BTYPE C

| See Note 6 18AB2-2 | | | | | |
|--------------------|--------------|---------|--------|------|-----------|
| Detail No | Strap | Studs | Elev | Type | Dimen "A" |
| 5.1 | 21x2x1-1/2 | 4x2/3/4 | — | A | — |
| 5.2 | 27x3/4x2-1/2 | 5x4/5/8 | (-3) | A | — |
| 5.3 | 4x3/8x2-1/2 | 4/5/8 | (-4/8) | A | — |
| 5.4 | 10x1/2x3-1/2 | 3x6/7/8 | (-4) | A | — |
| 5.5 | 3x3/8x1-6 | 3/5/8 | (-4/8) | A | — |
| 5.6 | 21x3/4x3-7/2 | 4x7/8 | (-3) | C | 1" |
| 5.7 | 21x3/4x3-7/2 | 4x7/8 | (-3) | B | 1" |
| 5.8 | 4x1/2x2-0" | 3/4 | (-7/2) | A | — |



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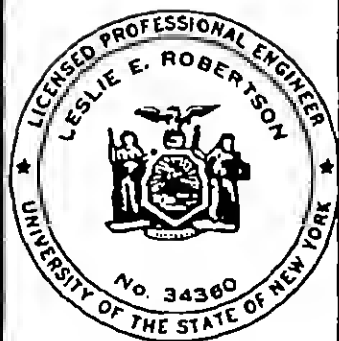
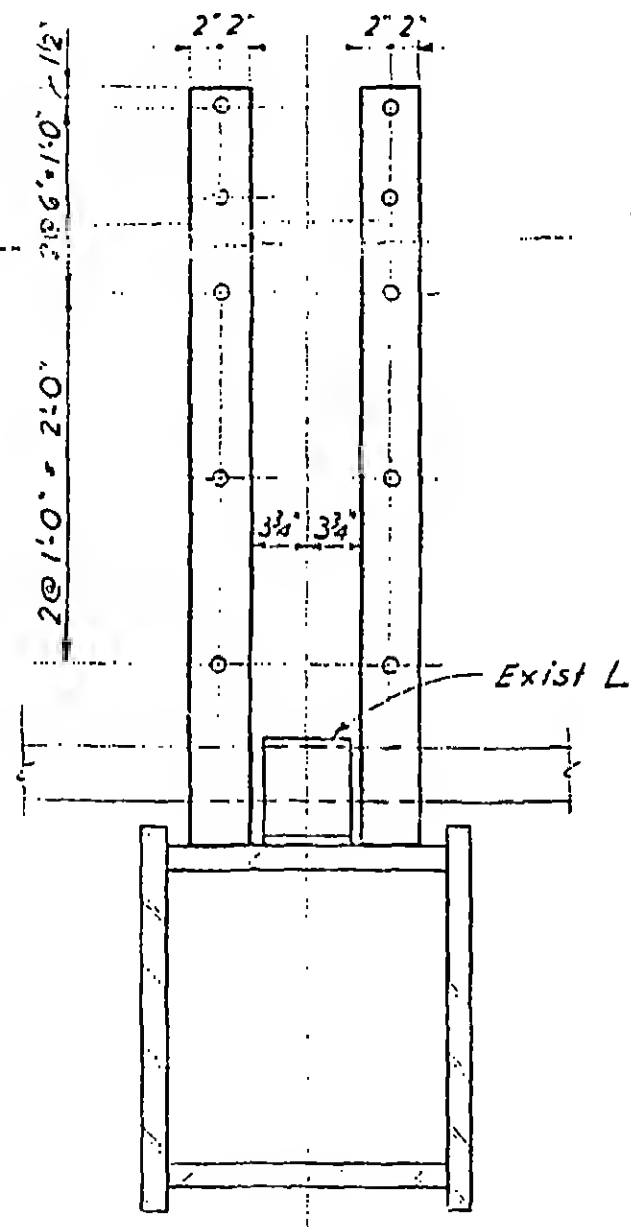
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TITLE STRAP ANCHORS - CORE - DETAIL 6

DATE 4/30/69

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| Detail No. | Strap | Studs | |
|------------|-------------------|-------------|--------|
| 6.1 | 4" x 1/2" x 4'-1" | 5/8" ϕ | (-3/2) |
| | | | |
| | | | |
| | | | |



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TITLE STRAP ANCHORS - CORE - DETAIL 7

DATE 10/30/68

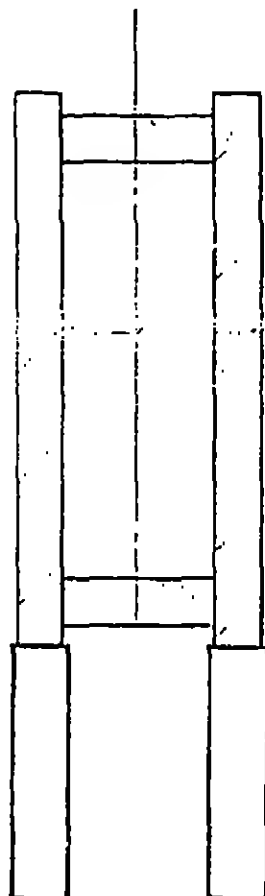
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5-28-69

10-1-69



See Note 6-18-AB2-2

| Detail No | Strap | Studs | Elev |
|--------------|-------------------|--------|-----------|
| 7.1 | 5"x1/2"x3'-7 1/2" | 7/58 | (-3'4") |
| 7.2 | 3"x3/8"x1'-7 1/2" | 3/34 | — |
| 7.3 | 3"x1/2"x2'-1 1/2" | 4/58 | — |
| 7.4 | 5"x5/8"x4'-1 1/2" | 8/58 | (-3'8") |
| 7.5 | 4"x3/4"x4'-1 1/2" | 9/58 | (-3) |
| 7.6 | 4"x5/8"x3'-7 1/2" | 7/58 | (-3'8") |
| 7.7 | 5"x3/4"x5'-1 1/2" | 10/58 | (-3) |
| 7.8 | 3"x3/8"x1'-6 1/2" | 3/58 | — |
| 7.9 | 4"x3/4"x3'-0" | 5/34 | (-7 1/2') |
| 7.10 | 3"x1/2"x1'-7 1/2" | 3/34 | — |
| 7.11 | 5"x3/4"x4'-0" | 7/78 | — |
| 7.12 | 6"x5/8"x4'-0" | 2x7/58 | (-3'3/8") |



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S. Wexler

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W. Brewer

18-AB2-7

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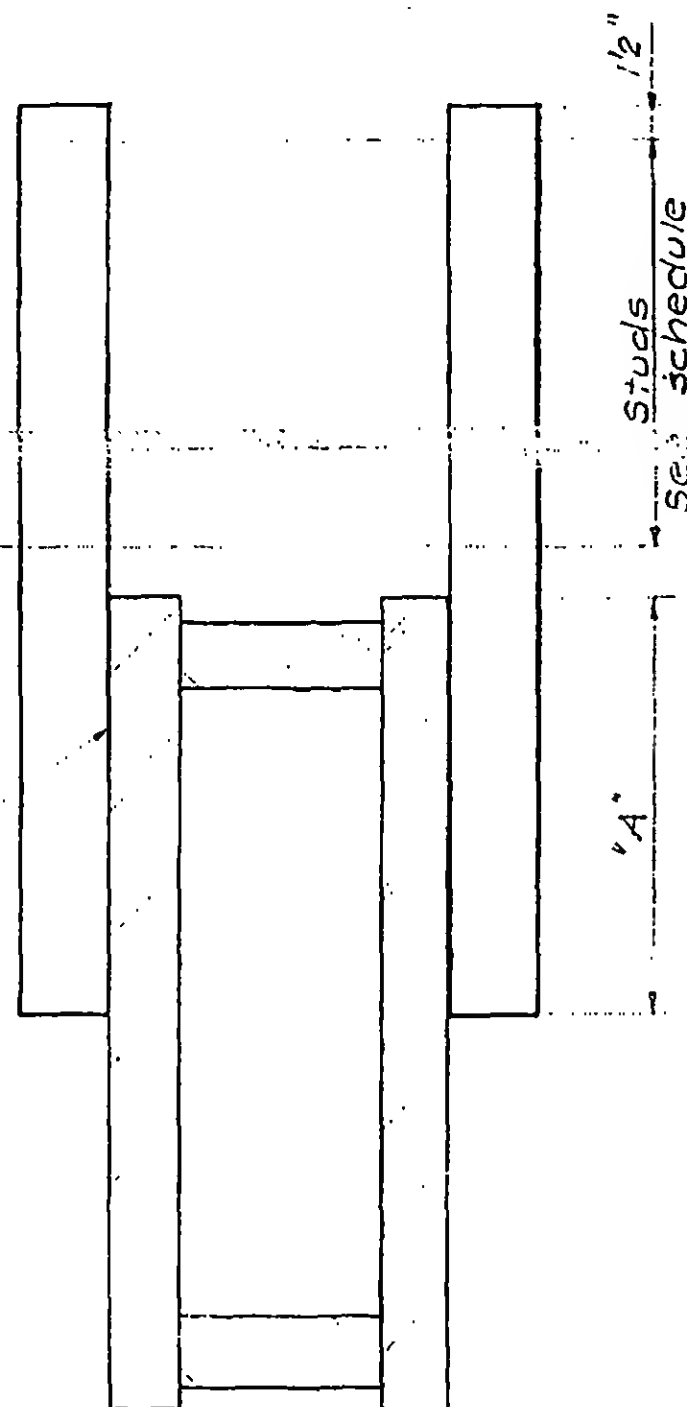
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TITLE STRAP ANCHORS - CORE - DETAIL B-

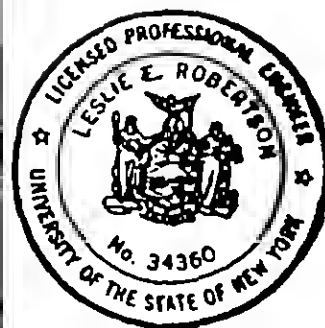
DATE 10/16/68

REVISIONS



See Note 6 1B-AB2-2

| Detail No | Strap | Studs | Elev | Dimen "A" | Weld No 1 |
|--------------|------------------|--------|------|--------------|--------------|
| B.1 | 6"x8"x4'-10 1/2" | 2x5/34 | — | 2'-3" | 1/2 |
| B.2 | 4"x8"x5'-1 1/2" | 7/34 | — | 1'-6" | 1/2 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



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DRAWN

S. Wexler

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W. E. Robertson

1B-AB2-8

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TITLE STRAP ANCHORS - CORE - DETAIL 9

DATE 10/30/68

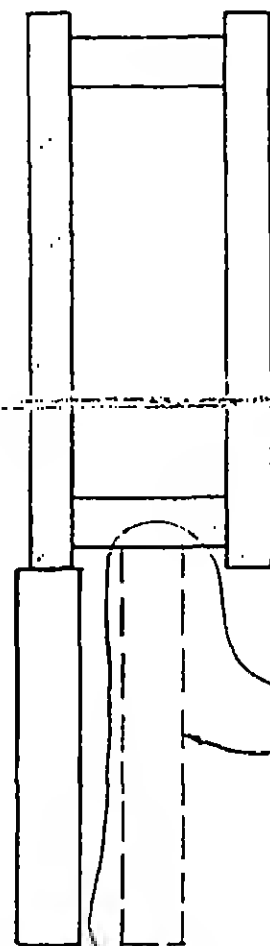
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5-20-69

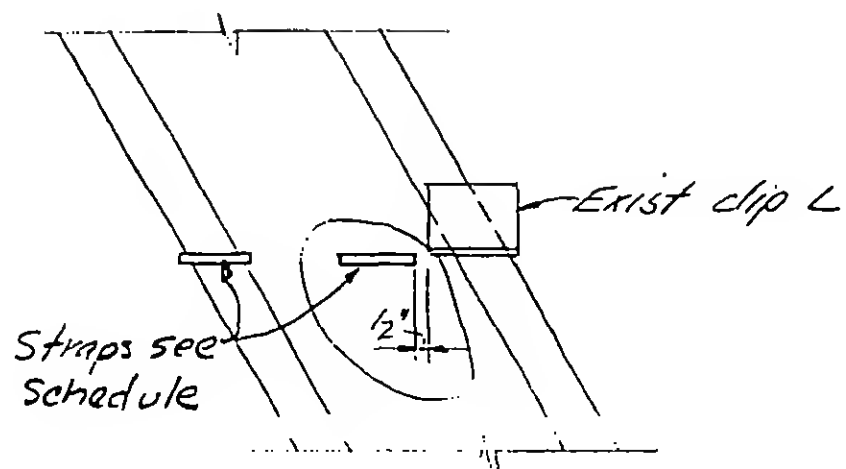
5-28-69

10-1-69

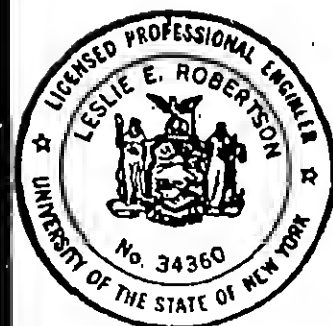


Detail 9.3 only

| See Note 6 18-AB2-2 | | | |
|---------------------|---------------|-------|----------|
| Detail No | Strap | Studs | Elev |
| 9.1 | 3x3/4x2-7/2 | 5/4 | (-3 3/4) |
| 9.2 | 3x3/4x4-4 1/2 | 8/5B | (-4) |
| 9.3 | 3x3/4x4-4 1/2 | 5/8 | (-3 3/4) |
| 9.4 | 3x3/4x3-0 | 5/8 | (-7) |
| 9.5 | 3x3/4x3-6 | 6/3/4 | (-7) |

Straps see
Schedule

Elev. 9.3

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S. WexlerREVIEWED
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18-AB2-9

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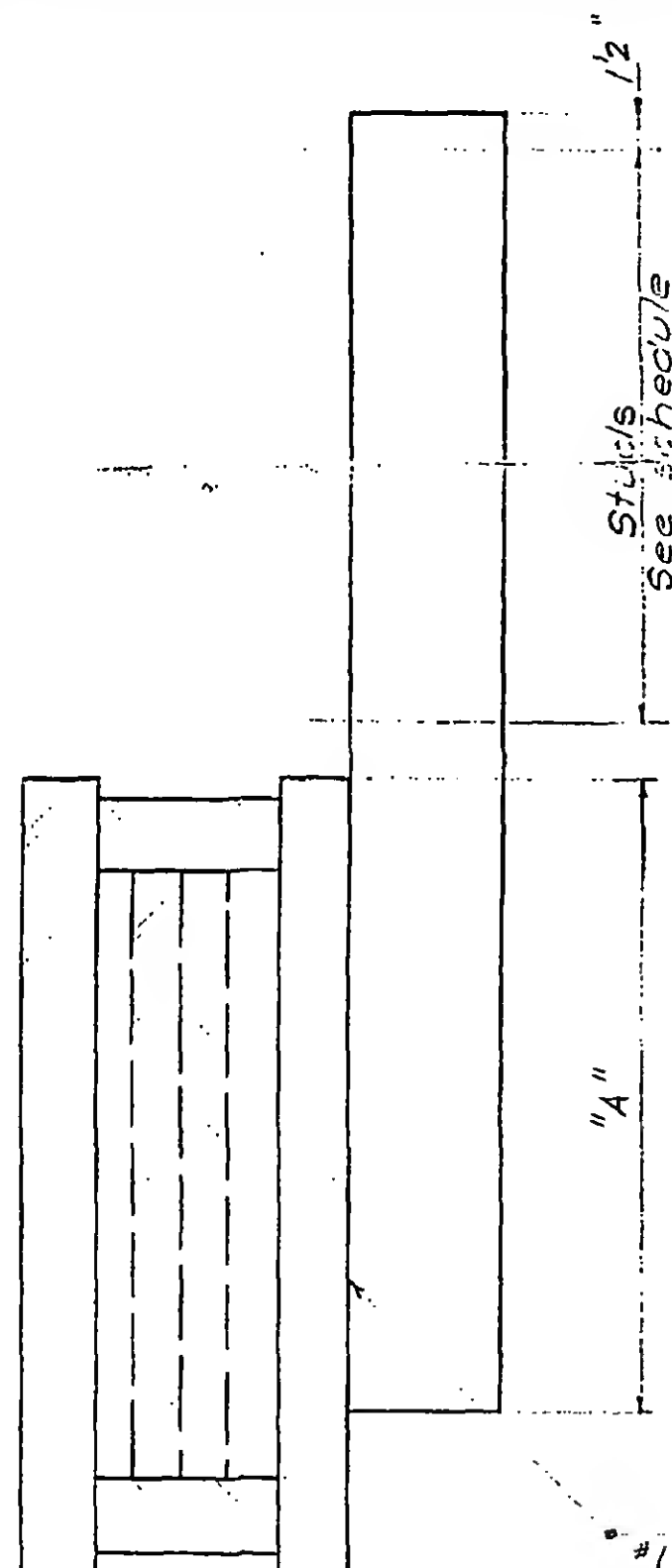
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TITLE STRAP ANCHORS - CORE - DETAIL 10

DATE 10-16-68

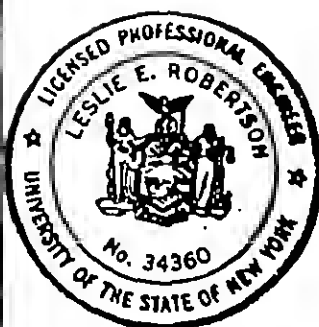
REVISIONS

2-7-69



| See Note 6 18-AB2-2 | | | | | |
|---------------------|-----------------------|----------|-------|-----------|---------|
| Detail No | Strap | Studs | Elev. | Dimen "A" | Weld #1 |
| 10.1 | 11" x 1" x 7'-11 1/2" | 3 x 7/34 | — | 4'-4" | 12 |
| 10.2 | 7 x 1 x 5'-1 1/2" | 2 x 7/34 | — | 2'-6" | 58 |
| | | | | | |
| | | | | | |
| | | | | | |

* Longitudinal spacing 4 1/2"



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18-AB2-10

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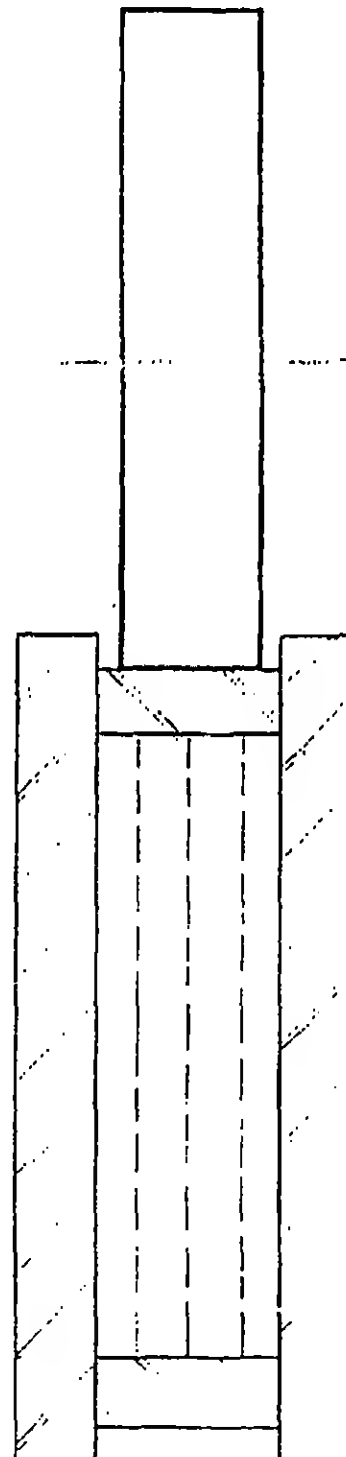
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TITLE STRAP ANCHORS-CORE-DETAIL 11

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| See Note 6 - 18-AB2-2 | | | |
|-----------------------|--------------------|----------|------|
| Detail No | Strap | Studs | Elev |
| 11.1 | 10" x 3/4" x 3'-0" | 3 x 7/8" | — |
| | | | |
| | | | |
| | | | |
| | | | |



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S. Wexler

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TITLE STRAP ANCHORS - CORE - DETAIL 12

DATE 2-7-69

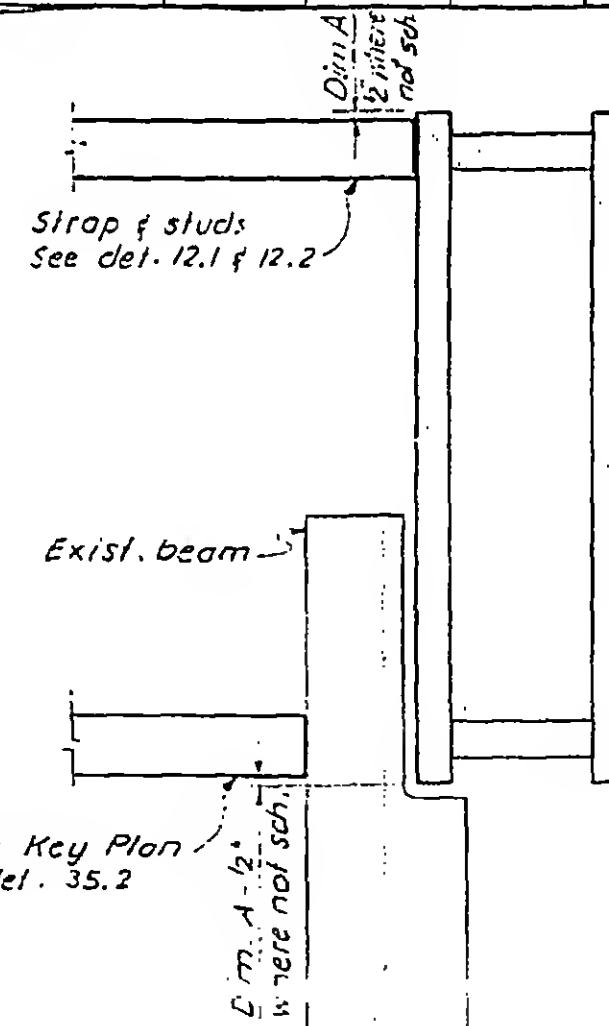
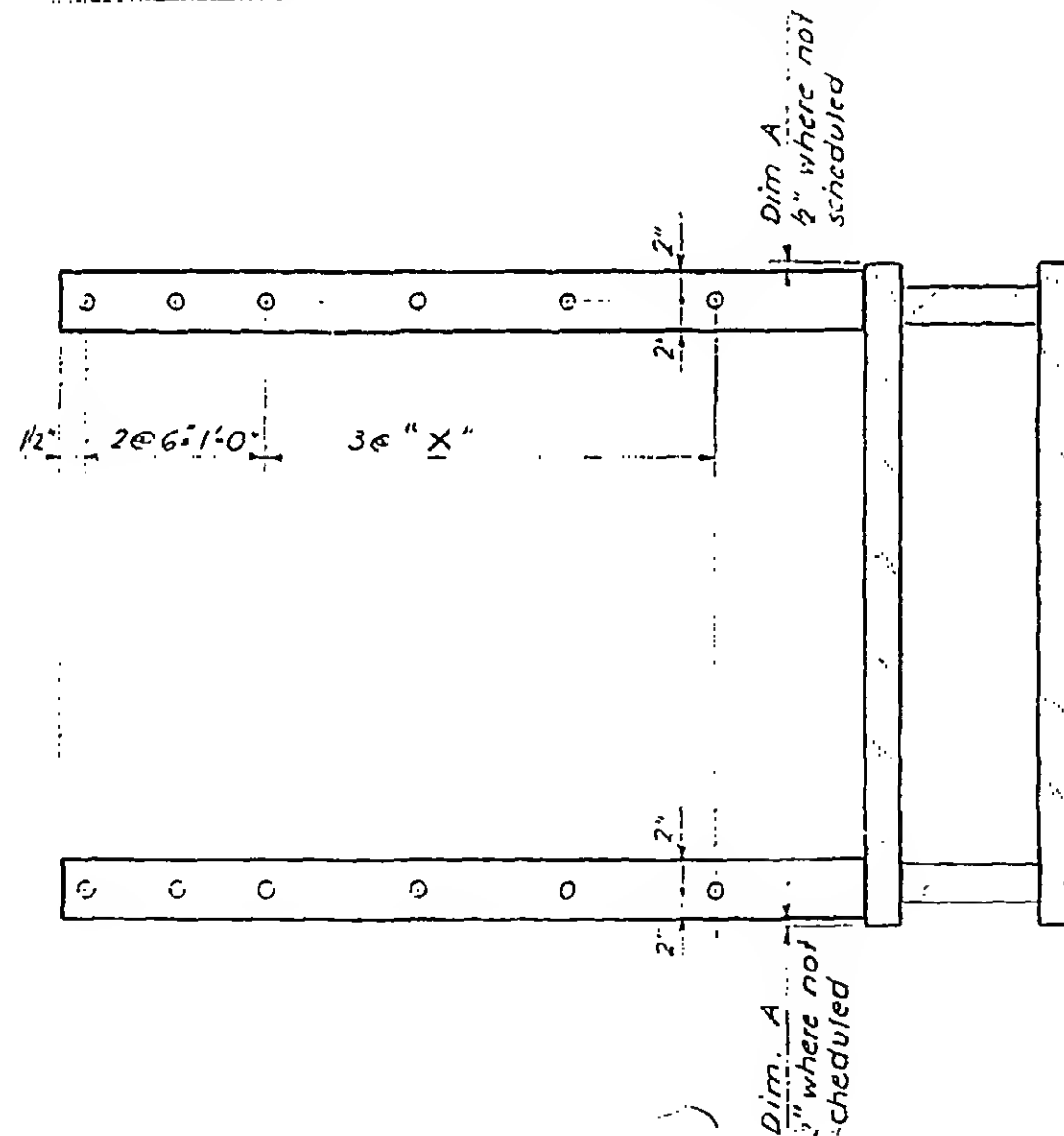
REVISIONS

4-30-69

10-1-69

See Note 6 18-AB2-2

| Detail No. | Strap | Studs | Elev. | Dim. A | Spacing "X" |
|------------|-------------------|-------|----------|--------|-------------|
| 12.1 | 4"x1/2"x4'-6" | 5/8" | (-3 1/2) | — | 10" |
| 12.2 | 4"x1/2"x4'-6" | 5/8" | (-3 1/2) | 5' | 10" |
| 12.3 | 4"x1/2"x4'-6" | 5/8" | (-3 1/2) | 4 1/2" | 10" |
| 12.4 | 4"x1/2"x3'-9 1/2" | 5/8" | (-3 1/2) | — | 8" |
| 12.5 | 4"x1/2"x3'-9 1/2" | 5/8" | (-3 1/2) | 5' | 8" |
| 12.6 | 4"x1/2"x3'-9 1/2" | 5/8" | (-4 1/2) | — | 8" |
| 12.7 | 4"x1/2"x3'-9 1/2" | 5/8" | (-3 1/2) | 6 1/2" | 8" |
| 12.8 | 4"x1/2"x3'-9 1/2" | 5/8" | (-3 1/2) | 9 1/2" | 8" |
| 12.9 | 4"x1/2"x4'-6" | 5/8" | (-3 1/2) | 6 1/2" | 10" |



DETAIL 12.3

18-AB2-12



31

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TITLE STRAP ANCHOR - CORE - DETAIL 13

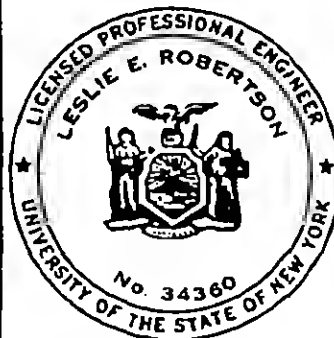
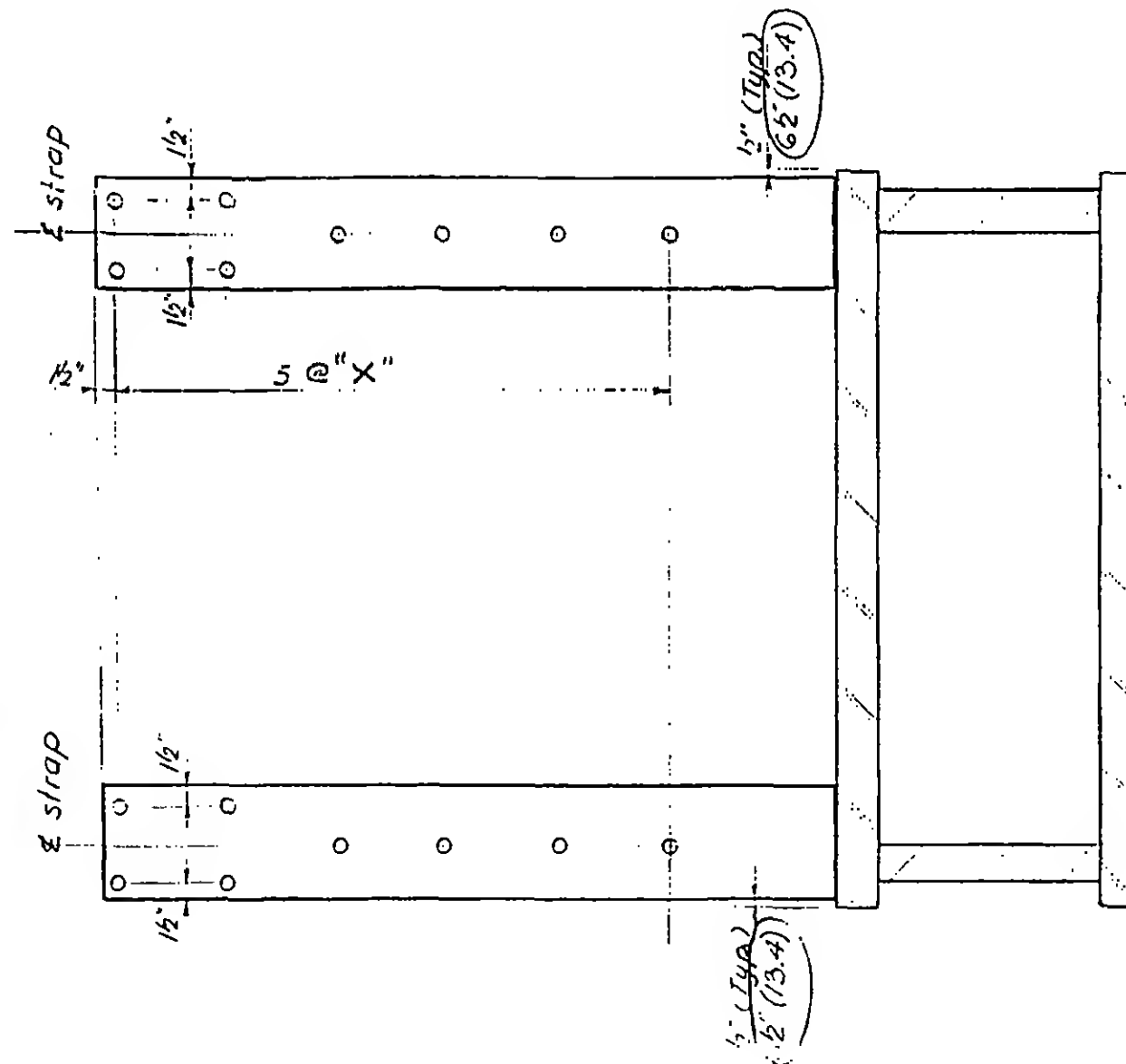
DATE 2-7-69

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See Note 6 18-AB2-2

| Detail No. | Strap | Studs | Elev. | Spacing "X" |
|------------|-----------------------|-------|--------|-------------|
| 13.1 | 8" x 1/2" x 4'-6" | 3/4" | (-3/2) | 8" |
| 13.2 | 6" x 1/2" x 4'-6" | 5/8" | (-3/2) | 8" |
| 13.3 | 8" x 1/2" x 3'-9 1/2" | 3/4" | (-3/2) | 7" |
| 13.4 | 6" x 1/2" x 4'-6" | 5/8" | (-3/2) | 8" |



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18-AB2-13

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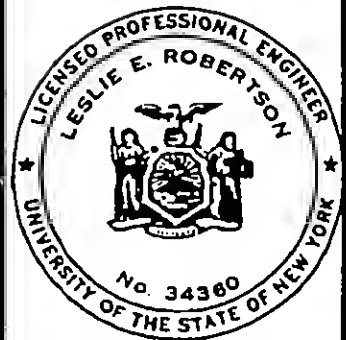
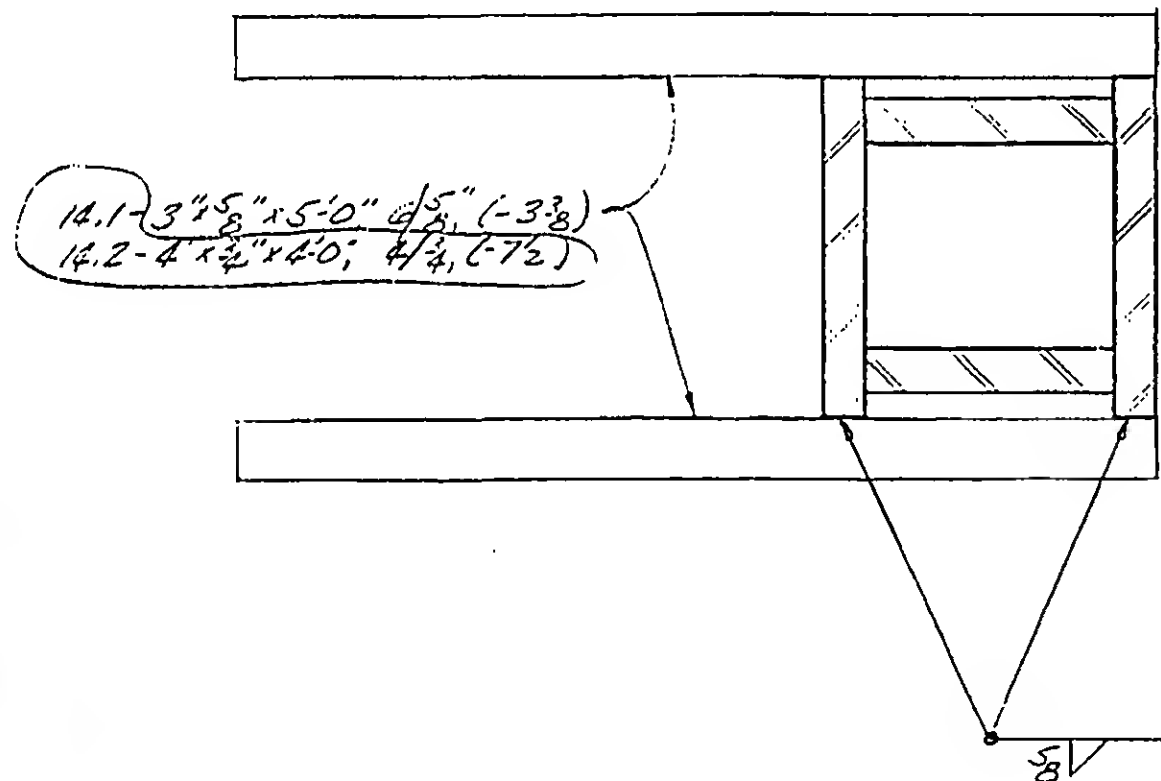
STRAP ANCHORS - CORE - DETAIL 14

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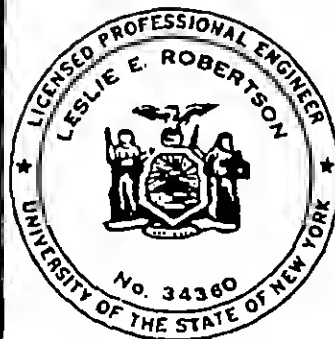
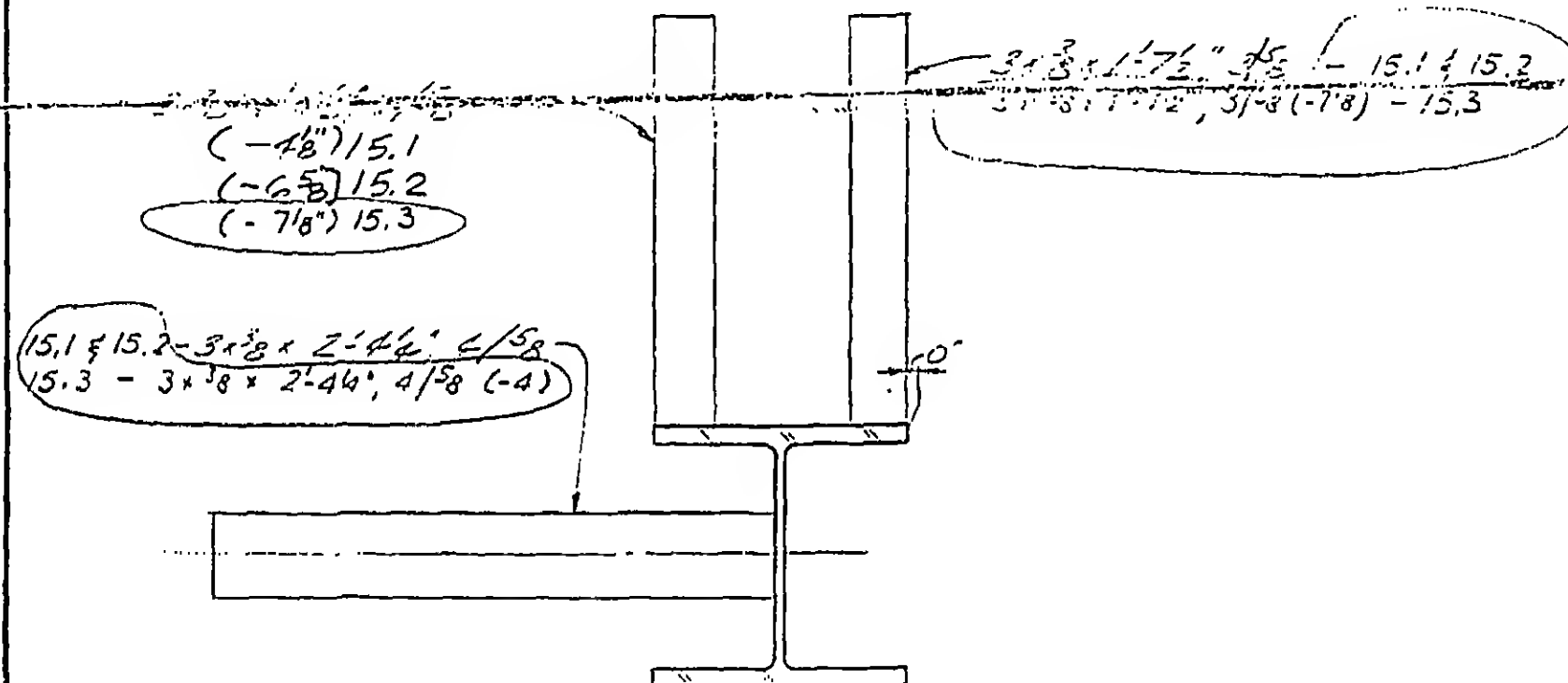
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TITLE STRAP ANCHORS - CORE - DETAIL 15

DATE 4/30/69

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41

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TITLE

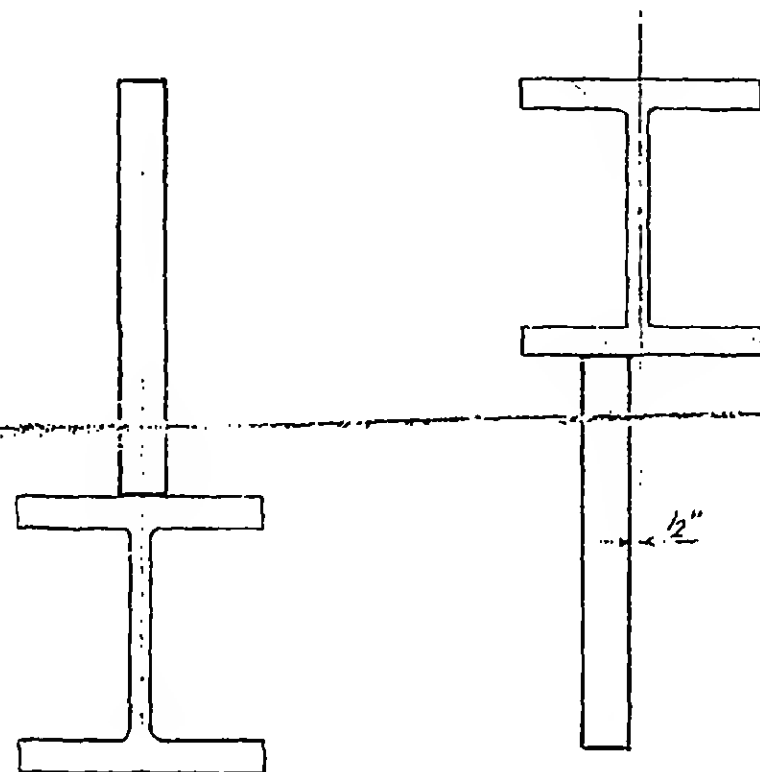
STRAP ANCHOR - CORE - DETAIL 16

DATE

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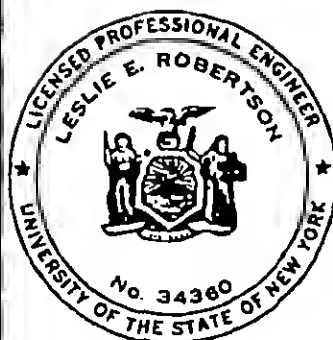


See Note 6-18-AB2-2

| Detail No | Strap | Studs | Elev. |
|-----------|-----------------------|-------|-----------|
| 16.1 | 3" x 3/8" x 3'-3" | 3/58 | (-35) |
| 16.2 | 3" x 3/8" x 2'-1 1/2" | 4/58 | (-37 1/8) |
| 16.3 | 3" x 3/8" x 1'-7 1/2" | 3/58 | (-41 1/8) |
| 16.4 | 3" x 3/8" x 2'-1 1/2" | 4/58 | (-38) |
| 16.5 | 3" x 3/8" x 3'-3" | 3/58 | (-66) |
| 16.6 | 3" x 3/8" x 1'-7 1/2" | 3/58 | (-75 1/8) |

Detail 16.1, 16.3, 16.4,
16.5, 16.6

Detail 16.2



42

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F. Smith

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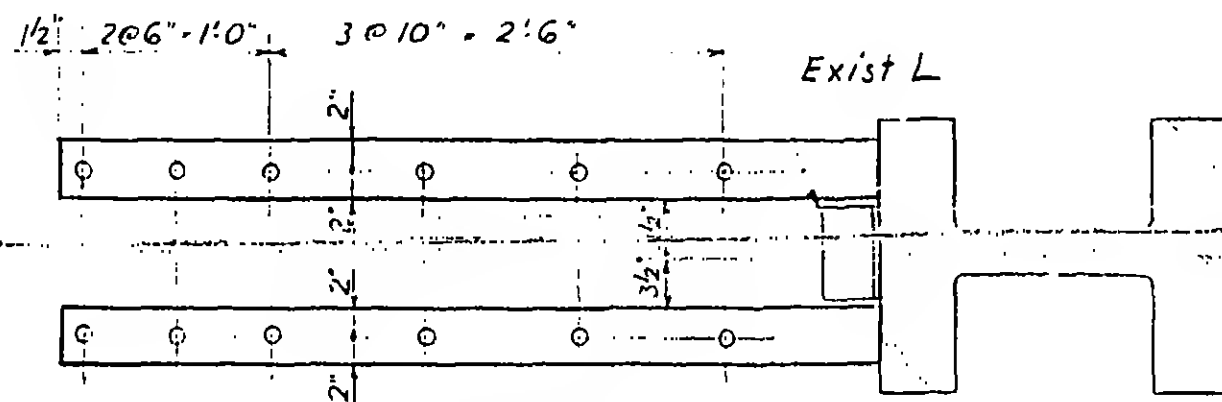
TITLE STRAP ANCHORS - CORE - DETAIL 17

DATE 4/30/69

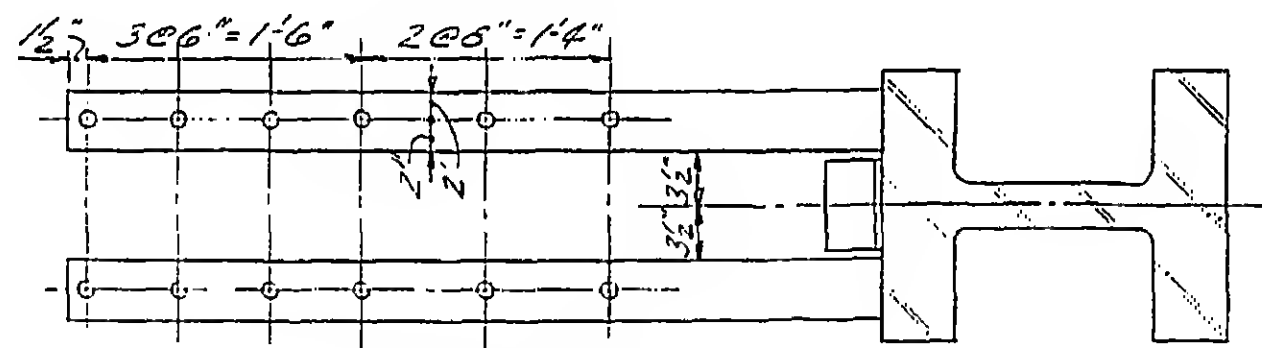
REVISIONS

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| Detail No | Strap | Studs | Elev. |
|-----------|-----------------------|--------|----------|
| 17.1 | 4" x 1/2" x 4'-6" | 5/8" | (-3 1/2) |
| 17.2 | 4" x 1/2" x 4'-6" | 5/8" | (-3 1/2) |
| 17.3 | 4" x 1/2" x 3'-9 1/2" | 5/8" | (-3 1/2) |
| 17.4 | 3" x 3/8" x 1'-6" | 2 1/8" | (-7 5/8) |

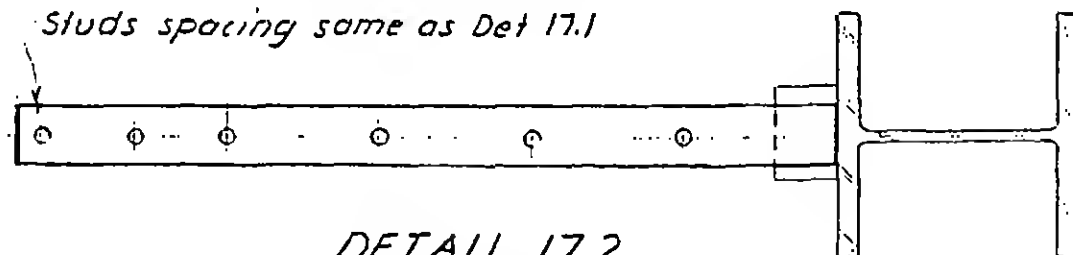


DETAIL 17.1

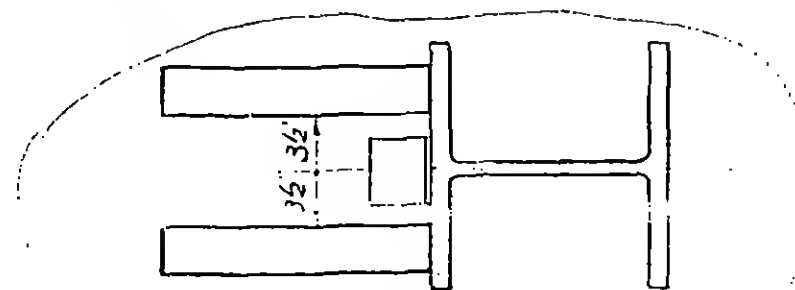


DETAIL 17.3

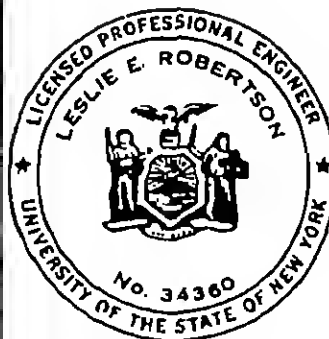
Studs spacing same as Det 17.1



DETAIL 17.2



DETAIL 17.4



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16-AB2-17

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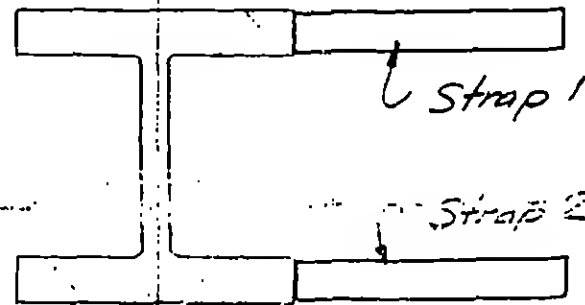
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TITLE STRAP ANCHOR - CORE - DETAIL 18

DATE 4/30/69

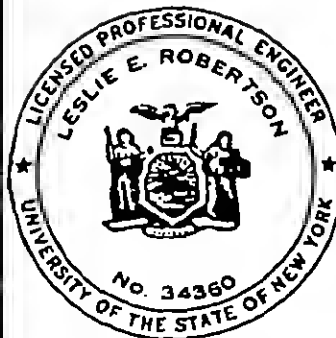
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5-28-69



See Note 6 18-AB2-2

| Detail No | Strap | Studs | Elev. Strap 1 | Elev. Strap 2 |
|-----------|---------------|-------|---------------|---------------|
| 18.1 | 3x3/8 x 1'-6" | 3/5/8 | (-7'5/8) | (-7'5/8) |
| 18.2 | 3x3/8 x 1'-6" | 3/5/8 | (-7'5/8) | (-6'6") |
| 18.3 | 3x3/8 x 1'-6" | 2/5/8 | (-7'5/8) | (-7'5/8) |



AK

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18-AB2-18

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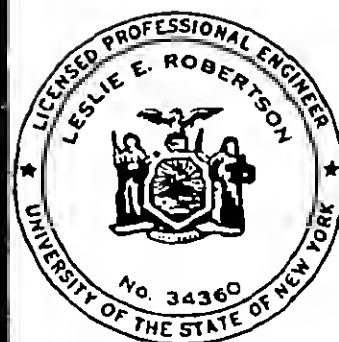
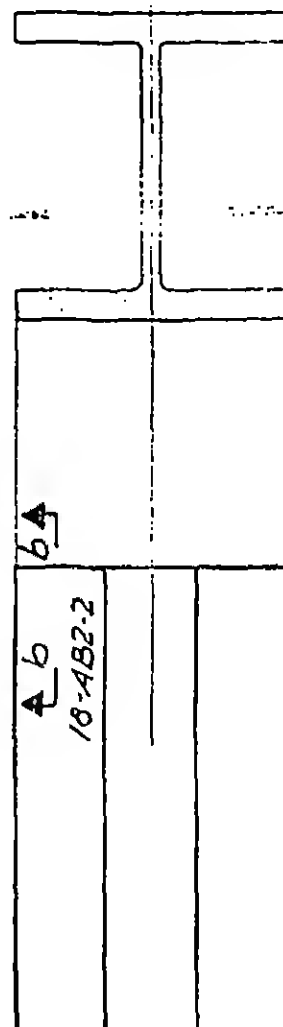
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TITLE STRAP ANCHOR - CORE - DETAIL 19

DATE 4/30/69

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| See Note 6 18-AB2-2 | | | |
|---------------------|-------------|--------|--------|
| Detail No | Strap | Studs | Elev |
| 19.1 | 6x1/2x2'-6" | 2, 5/8 | (-3/4) |
| | | | |
| | | | |
| | | | |



45

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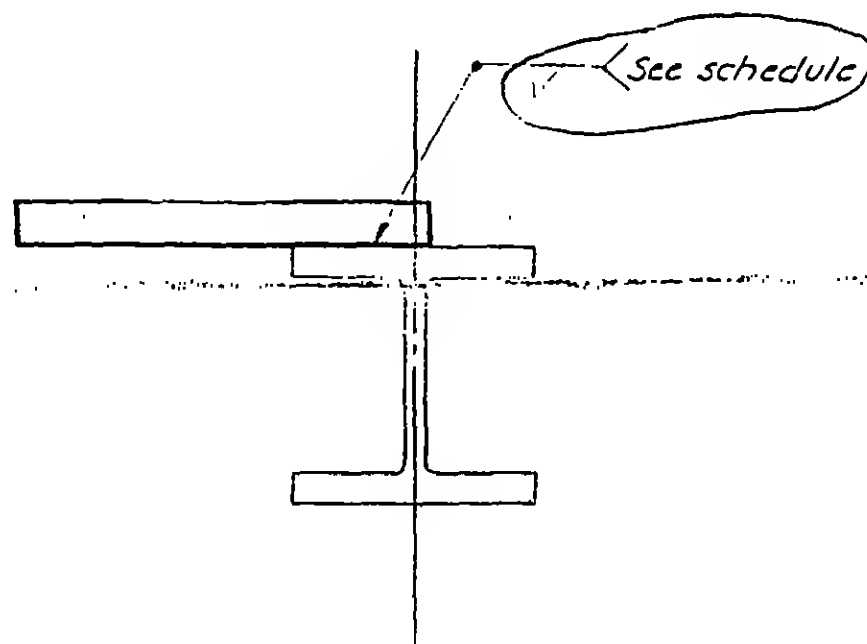
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TITLE STRAP ANCHORS - CORE - DETAIL 20

DATE 12-13-68

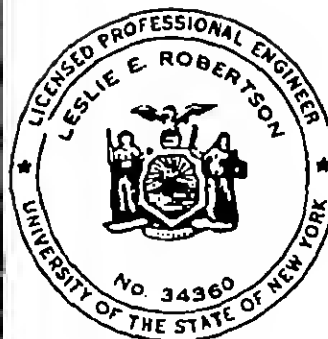
REVISIONS

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See Note 6 18-AB2-2

| Detail No. | Strap | Strap Size | Qty | Notes |
|------------|----------------|------------|--------|-----------|
| 20.1 | 3"x5/8"x2'-10" | 4/34 | — | 5/8" V9 |
| 20.2 | 3"x3/8"x2'-10" | 4/58 | (-3) | 5/8" V82 |
| 20.3 | 3"x3/8"x2'-3" | 3/58 | (-4/8) | 5/16" V72 |
| 20.4 | 4"x1/2"x3'-0" | 4/34 | (-4) | 1/2" V102 |



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| See Note 6 18-AB2-2 | | | |
|---------------------|---------------|-------|-----------|
| Detail No | Strap | Studs | Elev |
| 21.1 | 3"x3"x2'-3" | 3/8" | (-4") |
| 21.2 | 4"x3/4"x3'-9" | 6/8" | (-3 3/4") |
| 21.3 | 3"x3"x2'-3" | 3/8" | (-1 1/8") |
| 21.4 | 3"x3"x2'-0" | 3/8" | (-4 8") |
| 21.5 | 3"x3"x2'-3" | 3/8" | (-6 8") |
| 21.6 | 3"x1/2"x2'-3" | 3/4" | (-7 1/2") |
| 21.7 | 3 1/2"x2'-9" | 3/4" | (-7 1/2") |



47

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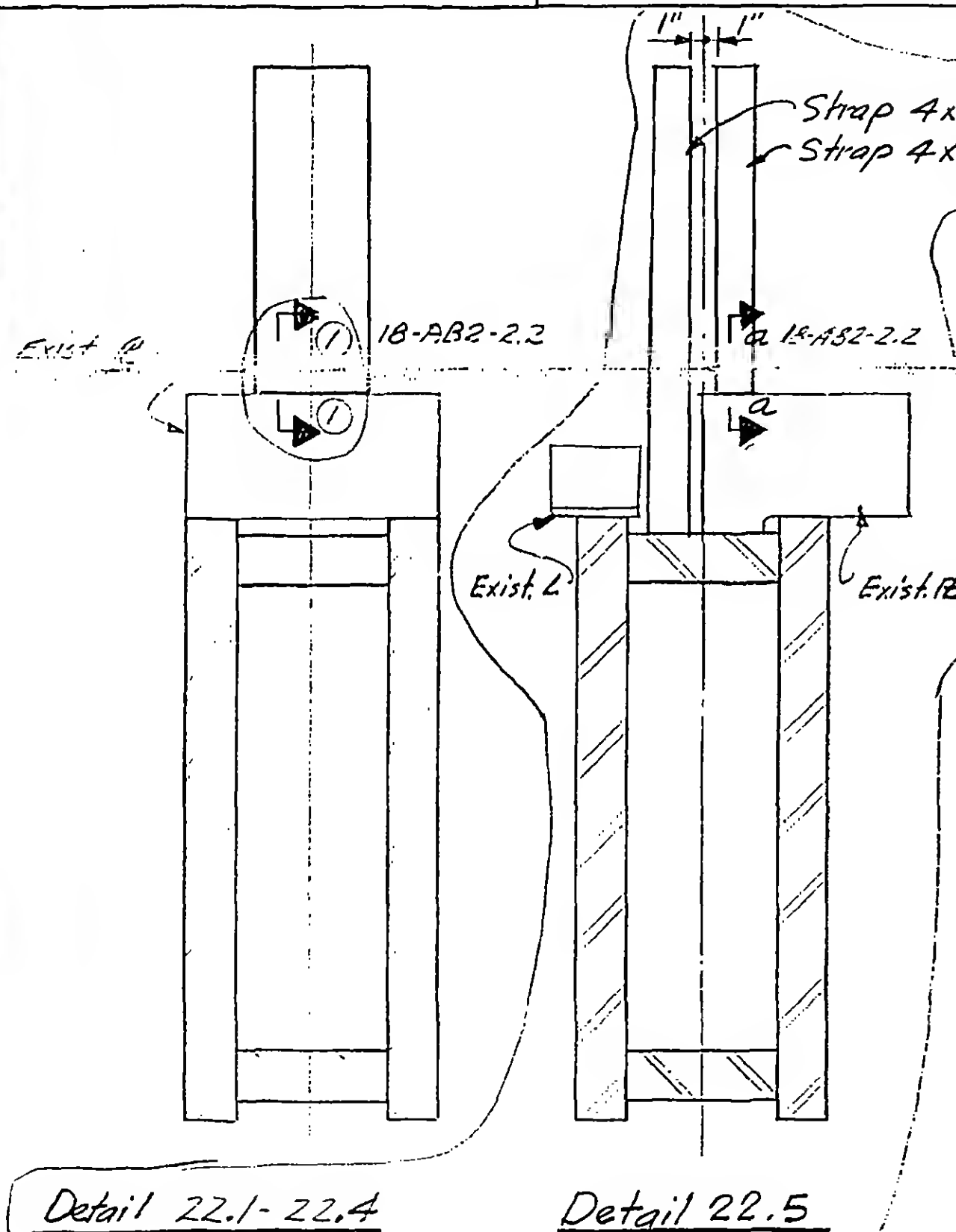
TITLE STRAP ANCHORS - CORE-DETAIL 22

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See Note 6 - 18-AB2-2

| Detail | Strap | Studs | Embed. | Section |
|--------|---------------|--------|----------|---------|
| 22.1 | 10x2x2'-7 1/2 | 3x5/58 | (-3) | a-a |
| 22.2 | 12x2x2'-7 1/2 | 3x5/58 | (-3) | a-a |
| 22.3 | 7x2x2'-7 1/2 | 2x5/58 | (-3) | a-a |
| 22.4 | 4x2x4'-0 | 8/58 | (-3 1/2) | b-b |



48

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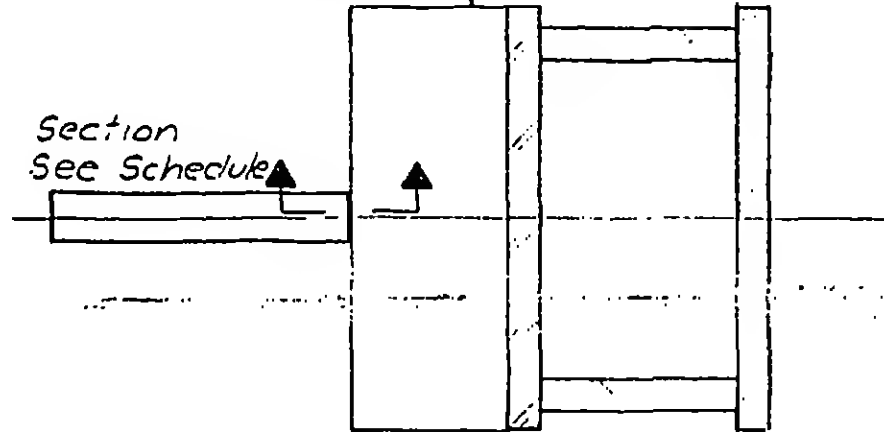
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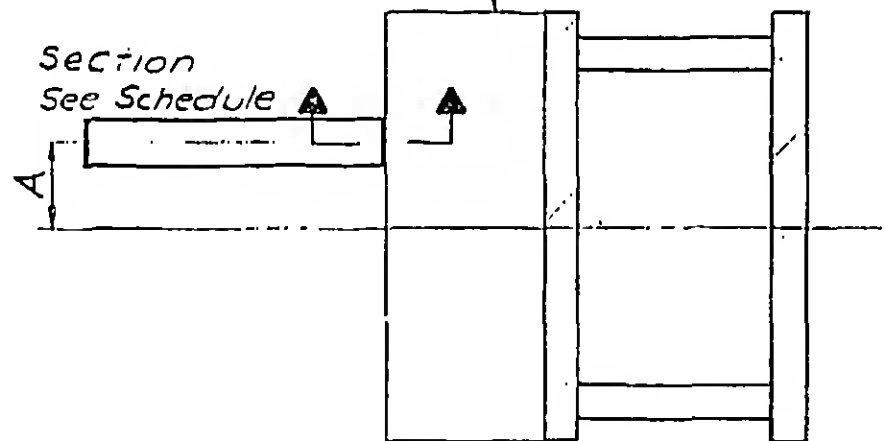
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Section
See ScheduleTYPE A

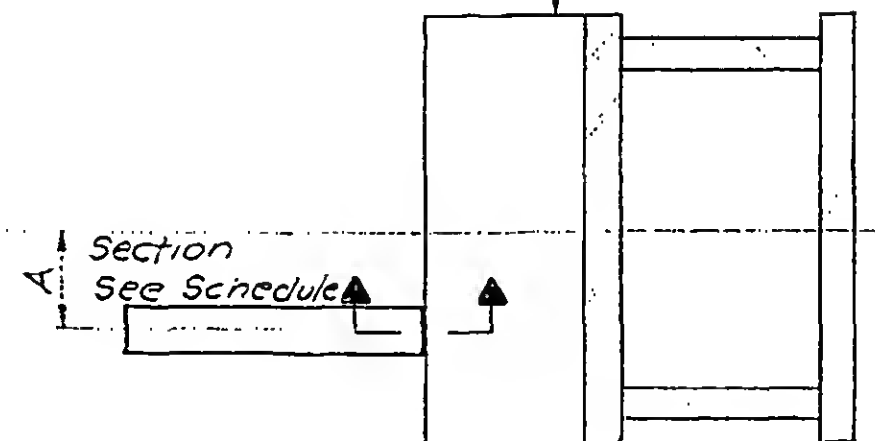
See Note 6 - 18-AB2-2

| Detail No | Strap | Studs | Elev | Type | Dimen. "A" | Section 18-AB2-2 |
|-----------|--------------|-------|----------|------|------------|------------------|
| 23.1 | 4"x2"x2-7/2" | 5/34 | (-5 3/4) | B | 9'2" | b-b |
| 23.2 | 4"x2"x3-1/2" | 6/58 | (-3 1/4) | B | 9'2" | b-b |
| | | | | | | |
| | | | | | | |
| | | | | | | |

EXIST. R

Section
See ScheduleTYPE B

EXIST. R

Section
See ScheduleTYPE CDESIGNED
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S. Wexler

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TITLE STRAP ANCHORS - CORE - DETAIL 24

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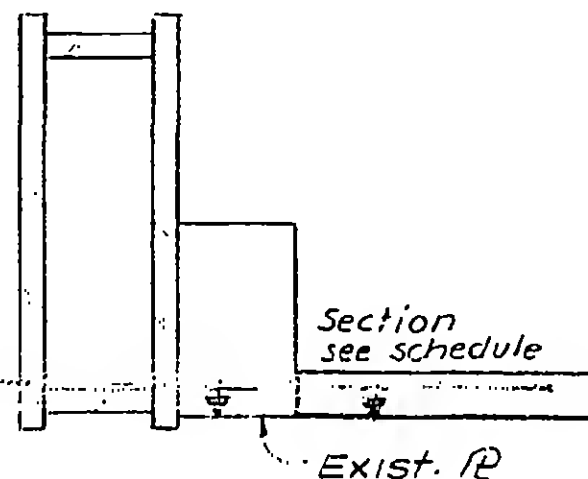
2-7-69

4-30-69

5-20-69

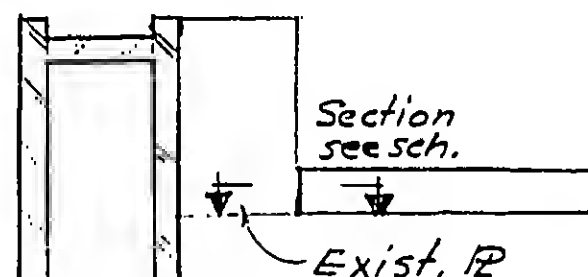
5-28-69

10-1-69

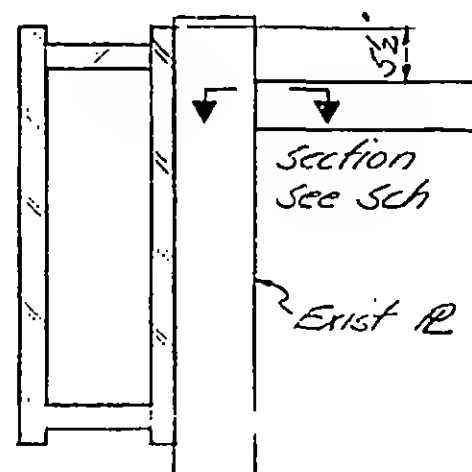


24.1 - 24.11, 24.13, 24.14

24.16, 24.17



24.12

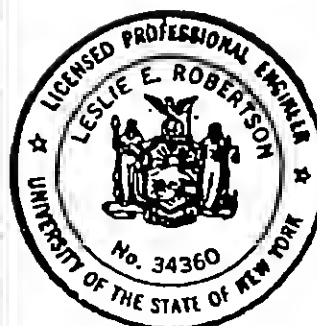


24.15

See Note 6 - 18-AB2-2

| Detail No | Strap | Studs | Elev | Section (18-AB2-2) |
|-----------|-------------------|---------|--------|--------------------|
| 24.1 | 4"x3/8"x2'-1 1/2" | 4/5/8 | (-3/8) | a-a |
| 24.2 | 3"x3/8"x1'-7 1/2" | 3/3/4 | (-5/8) | b-b |
| 24.3 | 4"x1/2"x2'-11" | 6/5/8 | (-5/8) | b-b |
| 24.4 | 4"x1/2"x2'-11" | 6/5/8 | (-5/2) | a-a |
| 24.5 | 3"x3/8"x2'-1 1/2" | 4/5/8 | (-5/8) | a-a |
| 24.6 | 5"x3/8"x1'-6" | 3/3/4 | (-6/8) | a-a |
| 24.7 | 3"x3/8"x1'-6" | 3/5/8 | (-6/8) | a-a |
| 24.8 | 3"x3/8"x1'-6" | 3/5/8 | (-3/8) | b-b |
| 24.9 | 3"x3/8"x1'-6" | 3/5/8 | (-3/8) | a-a |
| 24.10 | 3"x3/8"x2'-0" | 4/5/8 | (-3/8) | b-b |
| 24.11 | 3"x3/8"x2'-0" | 4/5/8 | (-5/8) | b-b |
| 24.12 | 10"x5/8"x5'-6" | 2x10/8 | (-3/8) | b-b |
| 24.13 | 5"x3/4"x5'-1/2" | 10/5/8 | (-3) | b-b |
| 24.14 | 5"x3/4"x5'-1/2" | 10/5/8 | (-9/2) | b-b |
| 24.15 | 4"x1/2"x2'-11" | 7/5/8 * | (-5/4) | b-b |
| 24.16 | 3"x3/8"x1'-6" | 3/5/8 | (-6/4) | a-a |
| 24.17 | 3"x3/8"x1'-6" | 3/5/8 | (-5/8) | a-a |

* @ 5" c.c.



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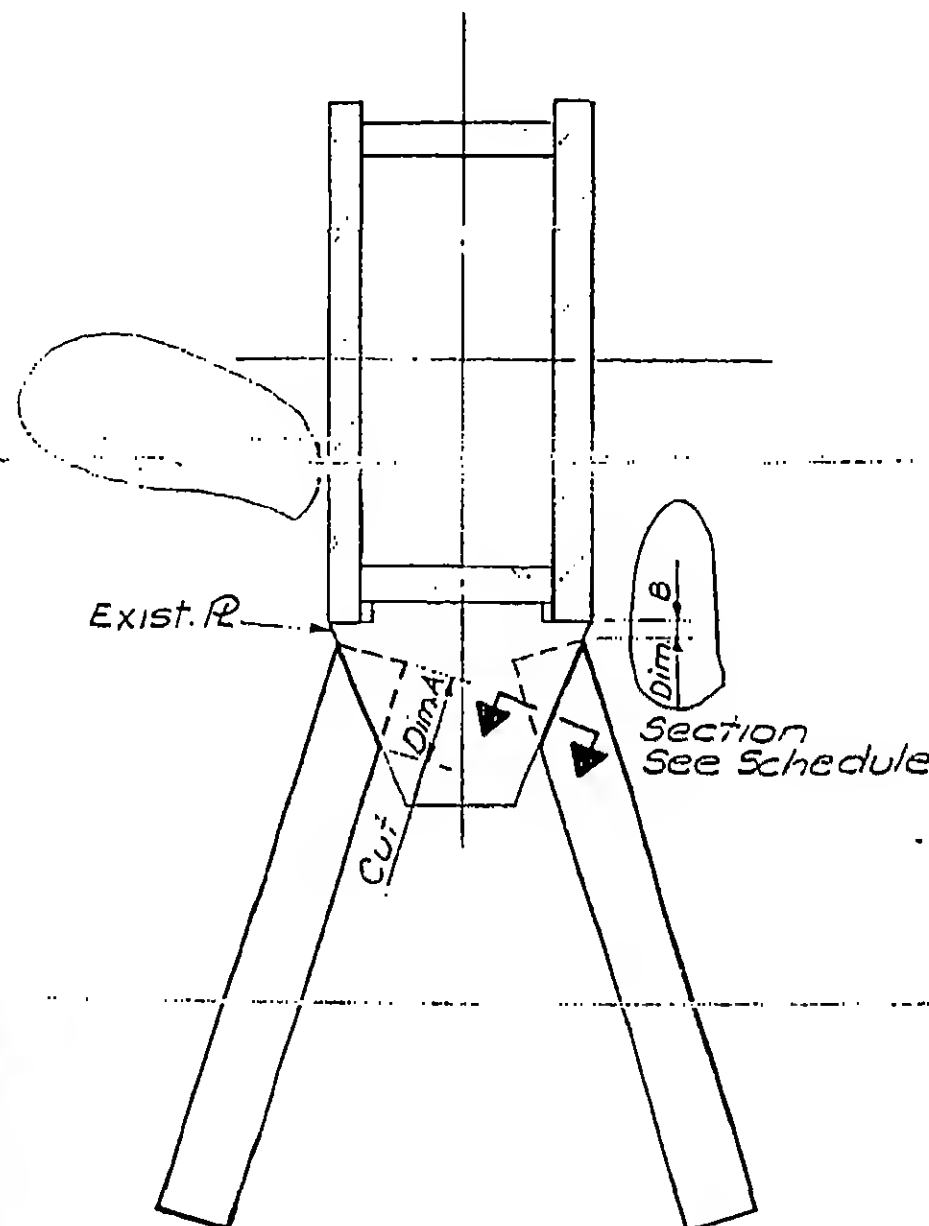
STRAP ANCHORS - CORE - DETAIL 25

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2-7-69



See Note 6 18-AB2-2

| Detail No | Strap | Studs | Elev | Dim A | Section (18-AB2-2) | Dim. B |
|-----------|-----------------|--------|--------|--------|--------------------|--------|
| 25.1 | 5"x2"x3'-7 1/2" | 7/58 | (-34) | 6" | b-b | 1" |
| 25.2 | 5"x2"x3'-7 1/2" | 7/58 | (-3) | 6" | a-a | 1" |
| 25.3 | 4"x4"x3'-7 1/2" | 7/58 | (-3) | 52" | b-b | 1" |
| 25.4 | 4"x2"x3'-12" | 6/58 | (-3) | 2" | a-a | 1" |
| 25.5 | 5 1/2"x8"x3'-3" | 2x6/58 | (-3/8) | 6 3/8" | b-b | 3/4" |
| | | | | | | |
| | | | | | | |



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TITLE STRAP ANCHORS - CORE - DETAIL 26

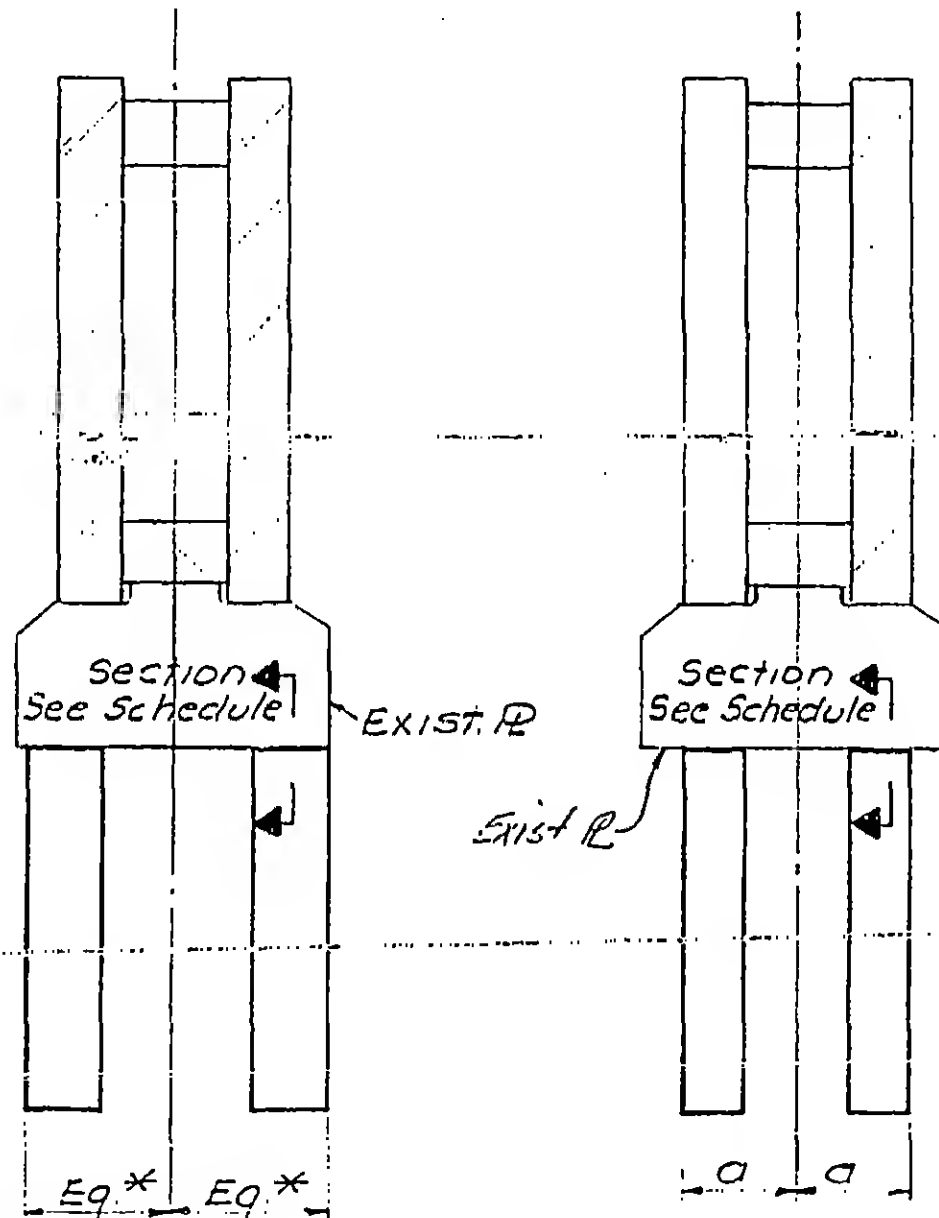
DATE 12-13-68

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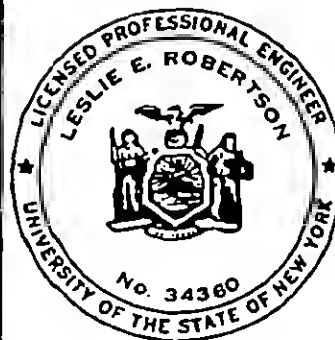
5-20-69

5-28-69



See note 6 18-AB2-2

| Detail No | Strap | Studs | Elev | Type | Dimen. "a" | Seal 18-AB2-2 |
|-----------|------------------|--------|----------|------|------------|---------------|
| 26.1 | 6"x12"x2-7/2" | 5/8 | (-5 1/2) | A | — | a-a |
| 26.2 | 6"x12"x2-1/2" | 4/5 | (-5 1/2) | A | — | a-a |
| 26.3 | 6"x12"x2-1/2" | 2x4/5 | (-3) | A | — | a-a |
| 26.4 | 5"x12"x3-0" | 6/58 | (-5) | B | 12" | a-a |
| 26.5 | 5"x12"x3-0" | 6/58 | (-5) | B | 10" | a-a |
| 26.6 | 6"x58"x2-0" | 2x4/34 | (-6 5/8) | B | 9" | b-b |
| 26.7 | 6"x12"x2-6" | 2x5/58 | (-3) | B | 8 1/2" | a-a |
| 26.8 | 6"x12"x2-6" | 2x5/58 | (-3 1/8) | B | 8 1/2" | a-a |
| 26.9 | 6"x12"x2-6" | 2x5/58 | (-5 1/2) | B | 8 1/2" | a-a |
| 26.10 | 5"x12"x3-7 1/2" | 7/58 | (-3 1/4) | A | — | b-b |
| 26.11 | 6"x12"x3-0" | 2x6/58 | (-3) | A | — | b-b |
| 26.12 | 4"x12"x2-0" | 4/58 | (-3 1/4) | B | 8 1/2" | b-b |
| 26.13 | 6"x58"x1-10 1/2" | 2x4/34 | (-6 3/8) | A | — | b-b |
| 26.14 | 8"x12"x2-0" | 2x4/34 | (-7) | A | — | b-b |
| 26.15 | 6"x12"x1-10 1/2" | 2x3/34 | (-7) | A | — | b-b |
| 26.16 | 6"x12"x1-10 1/2" | 2x3/34 | (-6 3/4) | B | 10" | b-b |



* Dimension to be maximum possible consistent with symmetry about column c.

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18-AB-2-26

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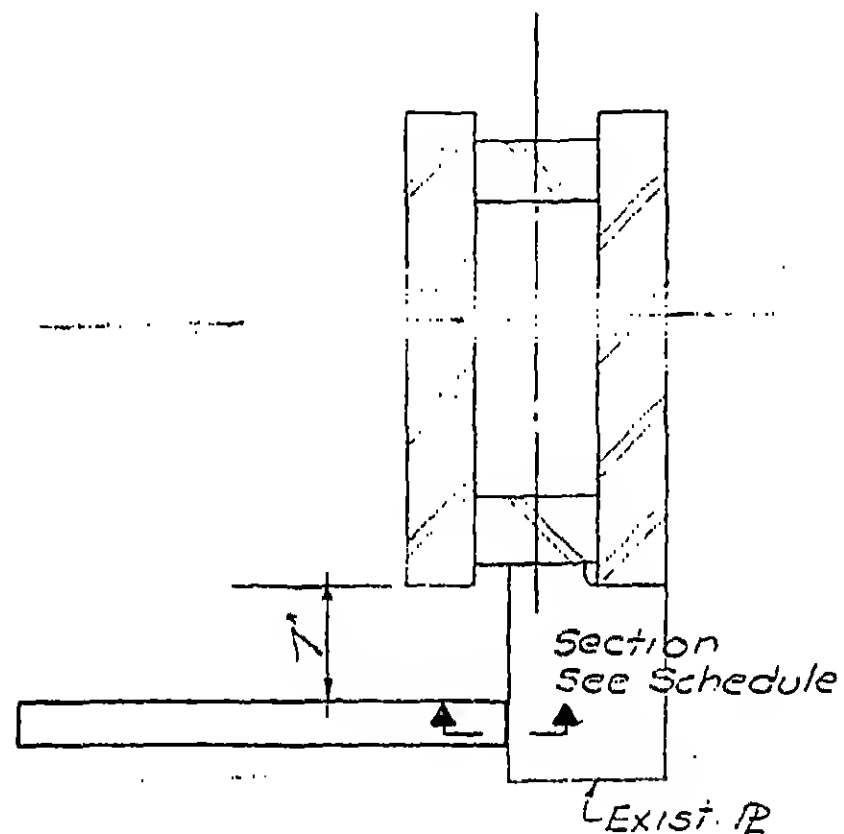
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TITLE ANCHOR STRAPS - CORE - DETAIL 27

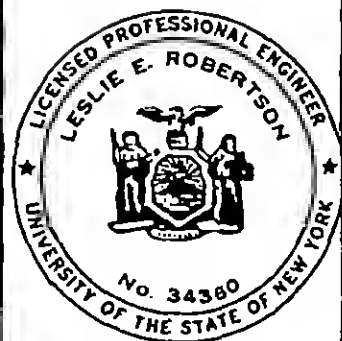
DATE 12-13-68

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See Note 6 1B-AB2-2

| Detail No | Strap | Studs | Elev. | Section (1B-AB2-2) |
|-----------|-------------|-------|--------|--------------------|
| 27.1 | 3'x2'x2-1/2 | 4/34 | (-5'2) | a-a |
| 27.2 | 3'x2'x2-3/4 | 5/36 | (-5) | c-c |
| 27.3 | 3'x2'x2-1/2 | 4/34 | (-6'2) | b-b |



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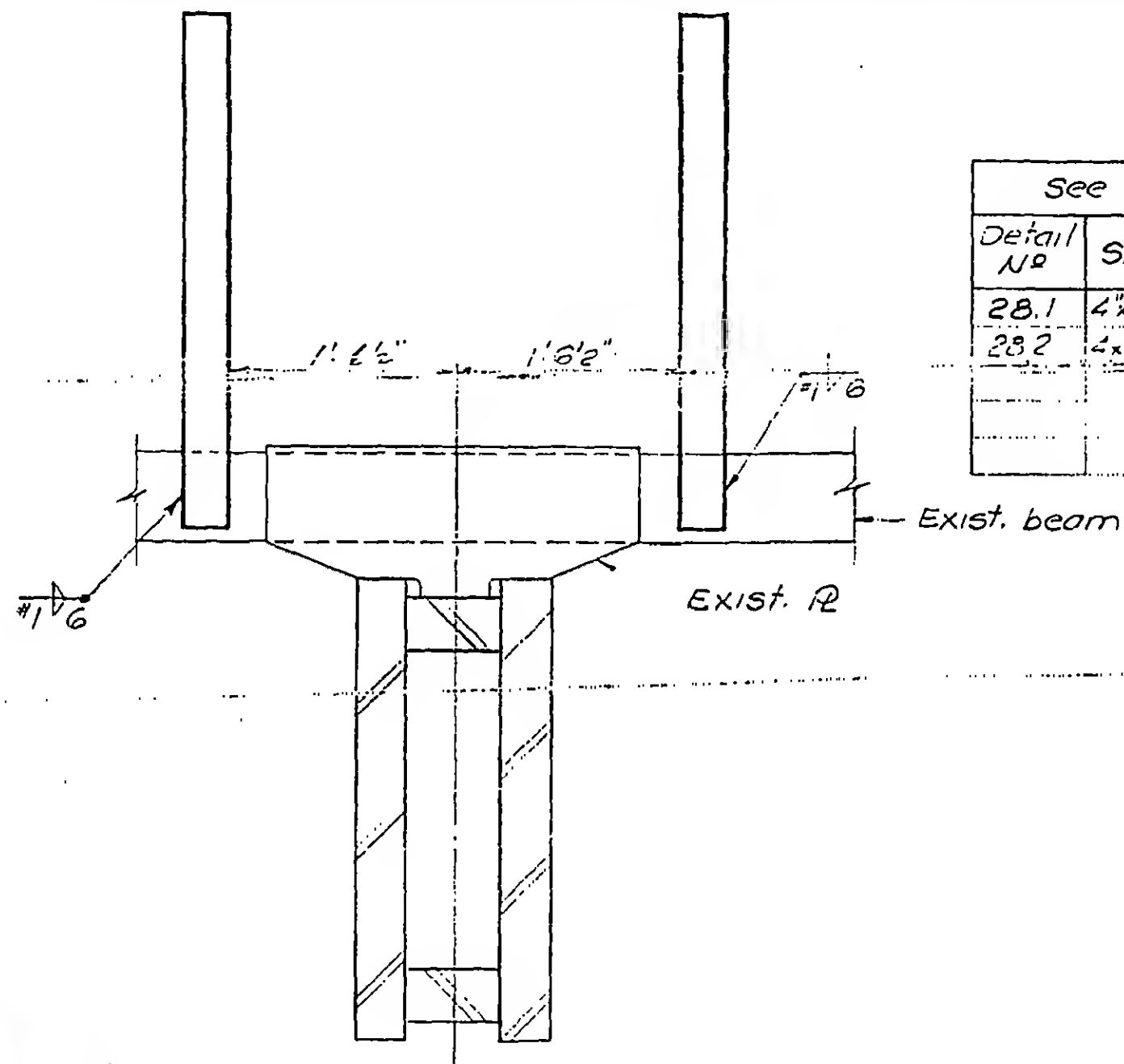
TITLE

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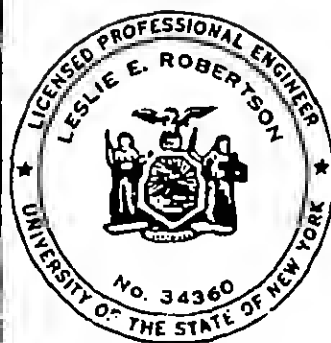
DATE

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| See note 6 18-AB2-2 | | | | |
|---------------------|------------|-------|------|--------|
| Detail No | Strap | Studs | Elev | Weld = |
| 28.1 | 4"x2x2-7/2 | 4/58 | — | 1/4 |
| 28.2 | 4"x2x2-6 | 4/32 | — | 5/16 |
| | | | | |
| | | | | |
| | | | | |



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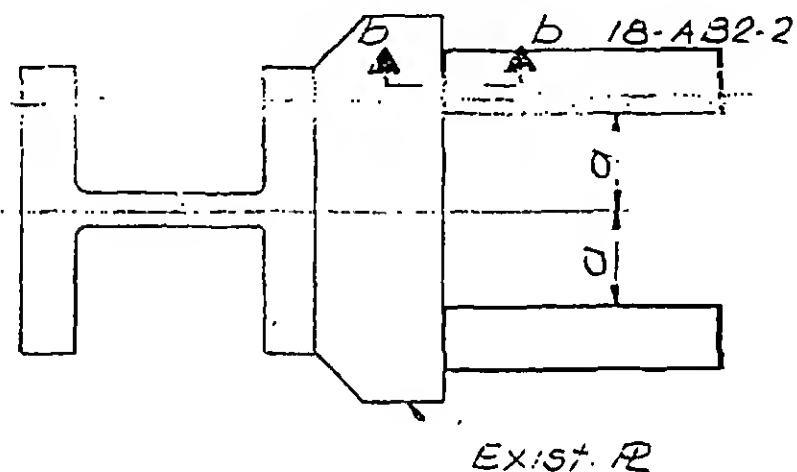
TITLE ANCHOR STRAPS - CORE - DETAIL 29

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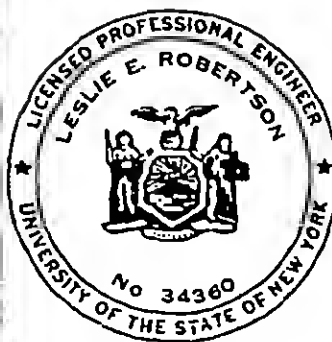
4-30-69

7-14-69



See Note 6 18-AB2-2

| Detail No | Strap | Studs | Elev | Dimen |
|-----------|-----------|--------|----------|-------|
| 29.1 | 4x8x1-6 | 3/58 | (-6'8) | 5" |
| 29.2 | 3x5/8x1-6 | 3/58 | (-6'5/6) | 5" |
| 29.3 | 6x2x2-0 | 4/78 | (-6'3/4) | 4'2" |
| 29.4 | 6x1/2x2-6 | 2x5/8 | (-3'4) | 7" |
| 29.5 | 6x1/2x2-6 | 2x5/8 | (-3'4) | 3'2" |
| 29.6 | 6x1/2x2-0 | 2x4/58 | (-3'4) | 5" |
| 29.7 | 6x1/2x2-0 | 2x4/58 | (-3) | 5" |
| 29.8 | 3x1/8x1-6 | 3/58 | (-3'3/8) | 2" |
| 29.9 | 6x1/2x2-6 | 2x5/8 | (-3'4) | 6" |
| 29.10 | 6x1/2x2-6 | 2x5/8 | (-3'4) | 3" |
| 29.11 | 6x1/2x2-6 | 2x5/8 | (-5'3/4) | 3" |



51

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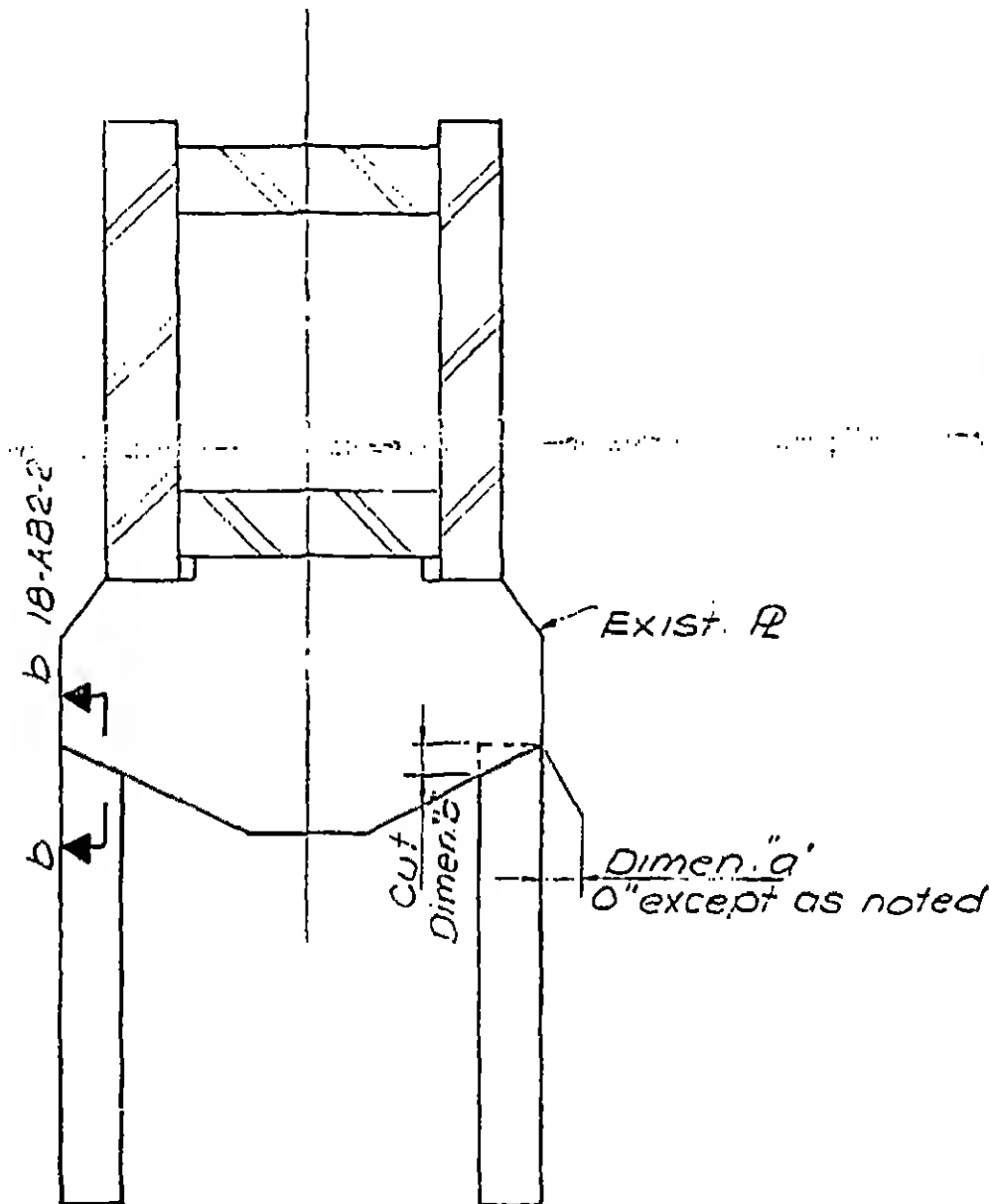
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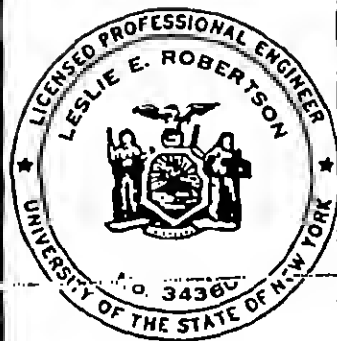
TITLE ANCHOR STRAPS - CORE - DETAIL 30

DATE 12-13-68

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| See Note 6 18-AB2-2 | | | | | |
|---------------------|-----------|-------|--------|-----------|-----------|
| Detail No | Strap | Studs | Elev | Dimen "c" | Dimen "b" |
| 30.1 | 2x3/4x26 | 5/8 | (-6'2) | - | 2' |
| 30.2 | 6x3/4x2-0 | 2x4/4 | (-6'2) | 5' | 4'8 |
| | | | | | |
| | | | | | |



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S. Wexler

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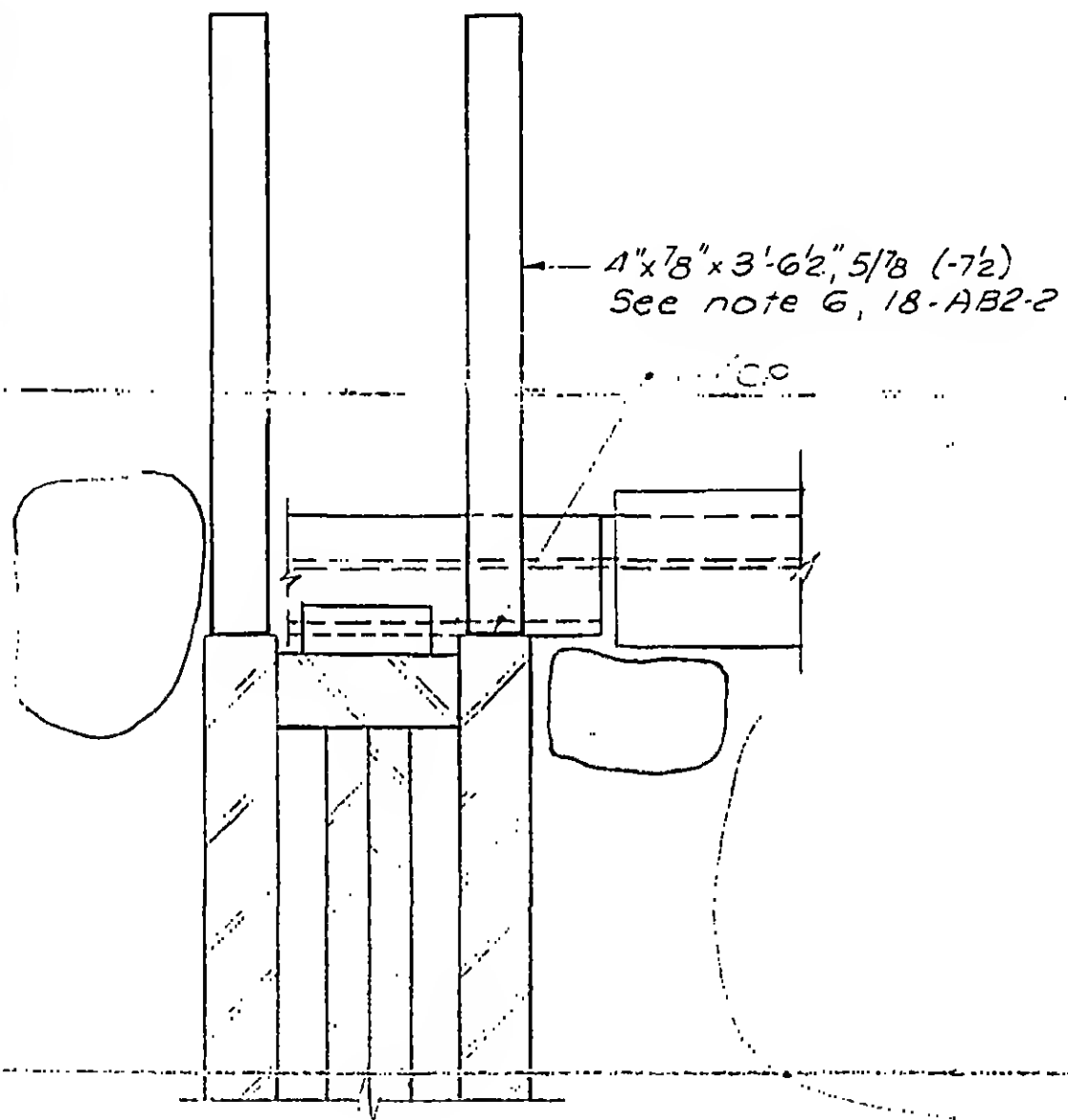
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TITLE STRAP ANCHORS - CORE - DETAIL 51

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S. WexlerREVIEWED
W. Brewer

18-AB2-51.1

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DATE

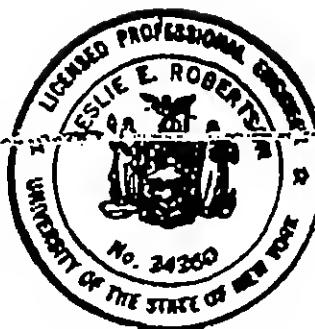
10/30/68

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2-7-69

4" x 3/8" x 2'-1 1/2", 3/4", (-72)
See note 6, 1B-AB2-2

CP

DETAIL 51 B

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W. S. LaB

DRAWN

S. Wexler

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W. Wexler

1B-AB2-51.2

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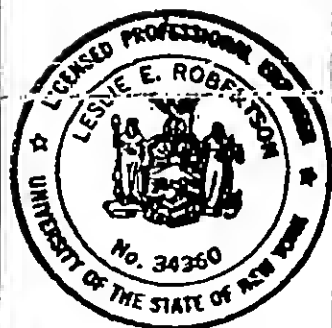
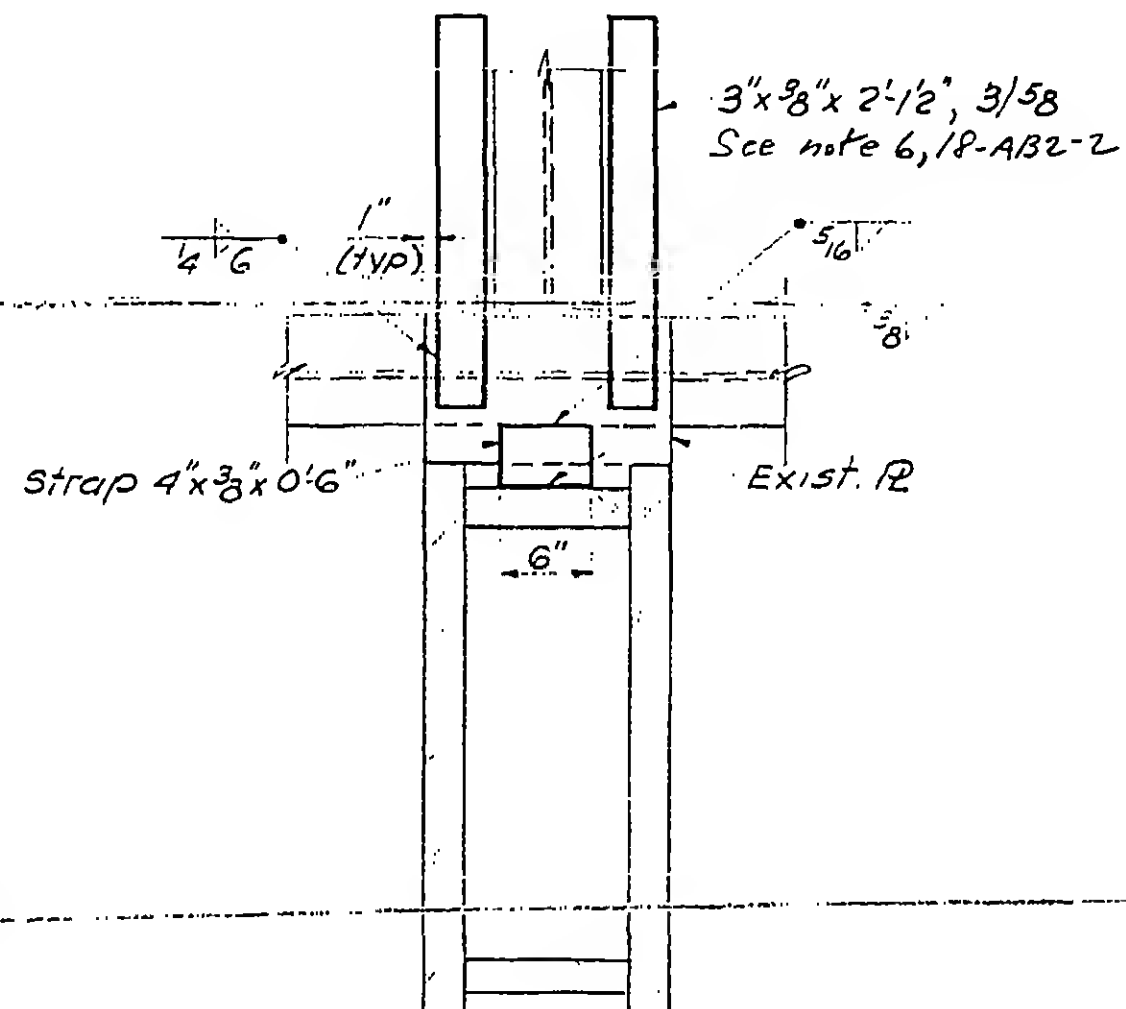
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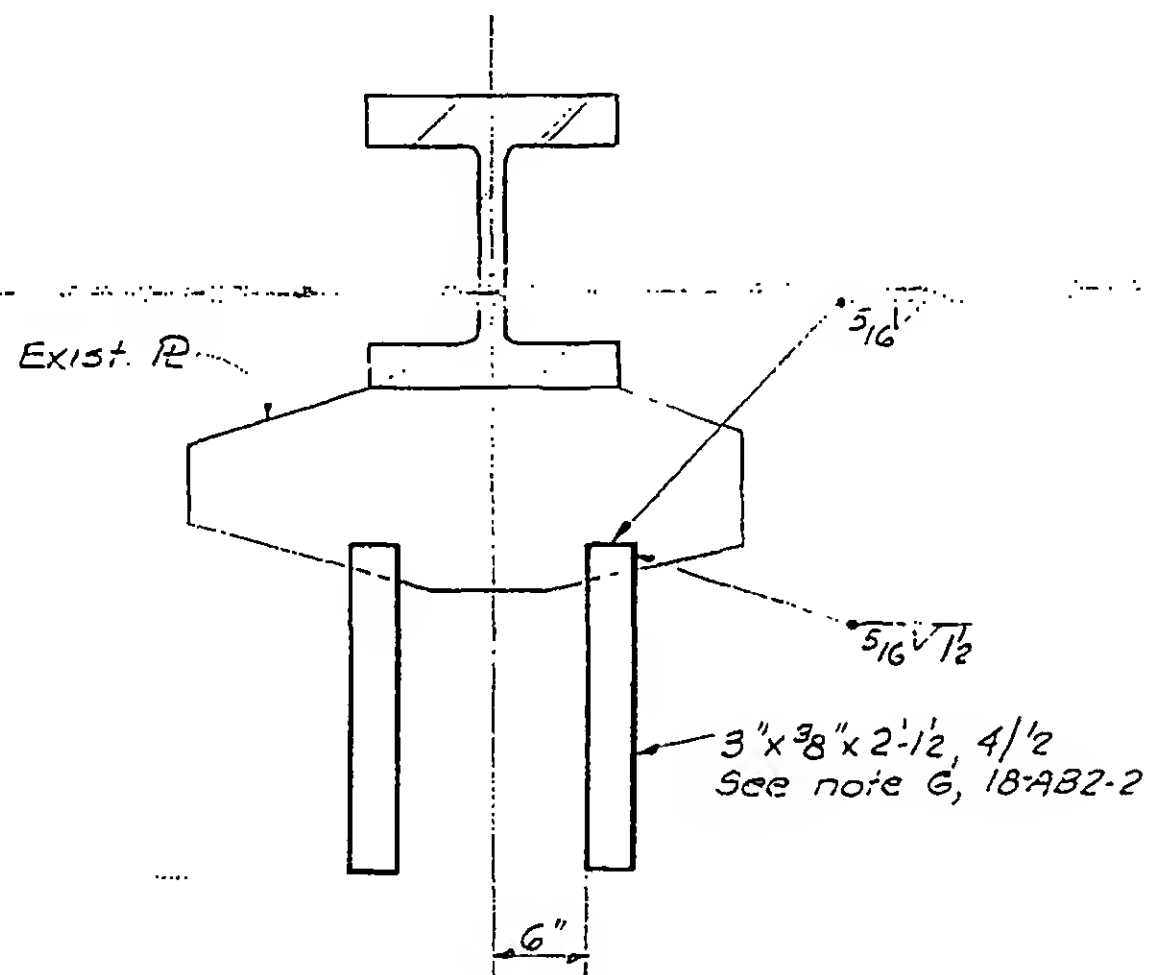
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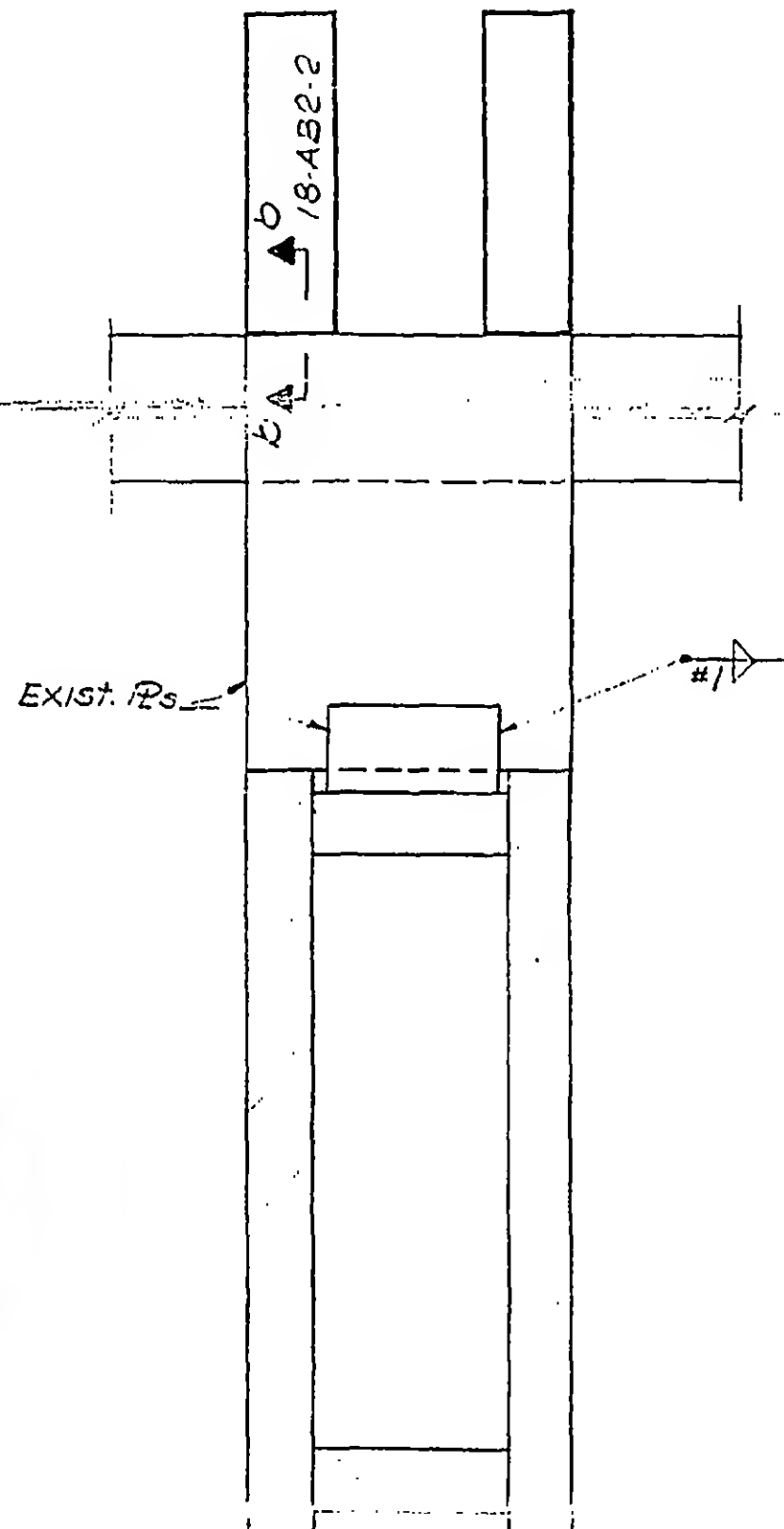
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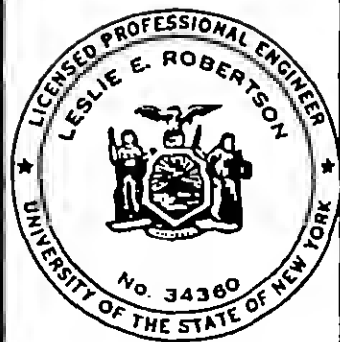
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See Note G 18-AB2-2

| Detail No | Strap | Strap Size | Qty | Yield #1 |
|--------------|-------------------|------------|--------|-------------|
| 31.1 | 6" x 8" x 1'-10" | 2 x 4/34 | (-6/8) | 58 |
| 31.2 | 8" x 12" x 2'-0" | 2 x 4/34 | (-7) | 12 |
| 31.3 | 3" x 3/8" x 1'-6" | 3/58 | (-6/8) | - |



DESIGNED

S. E. Robertson

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S. Wexler

REVIEWED

18-AB2-31

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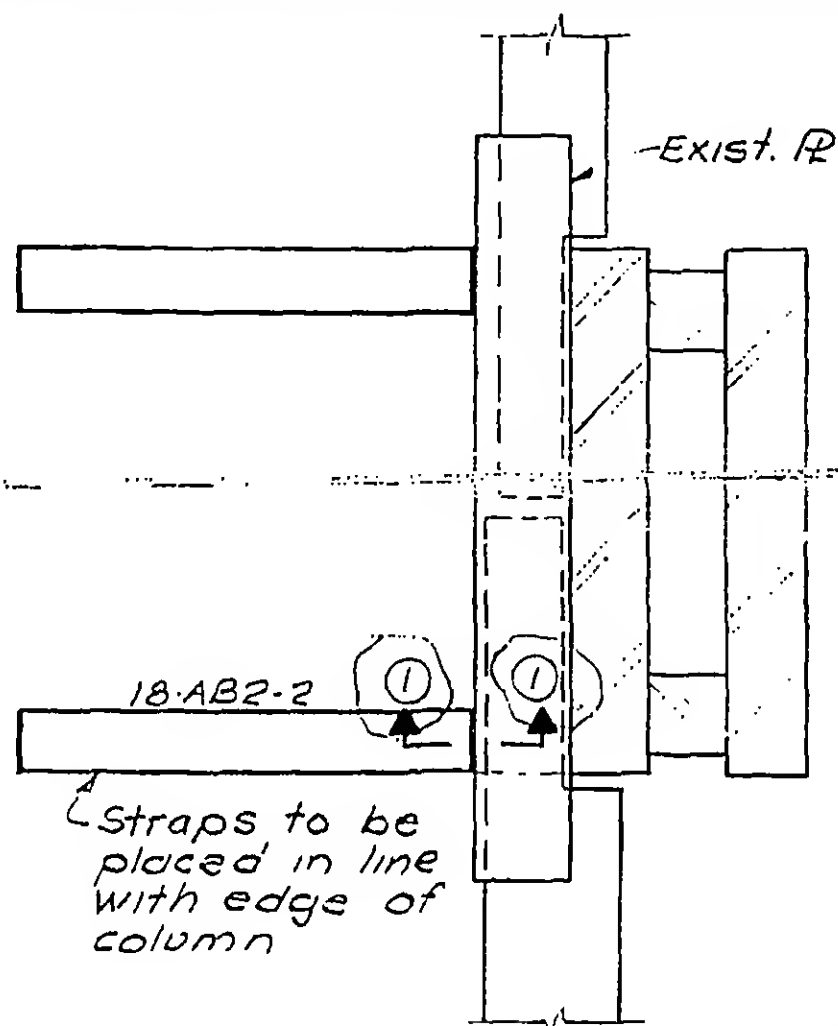
TITLE ANCHOR STRAPS - CORE - DETAIL 32

DATE 12-13-68

REVISIONS

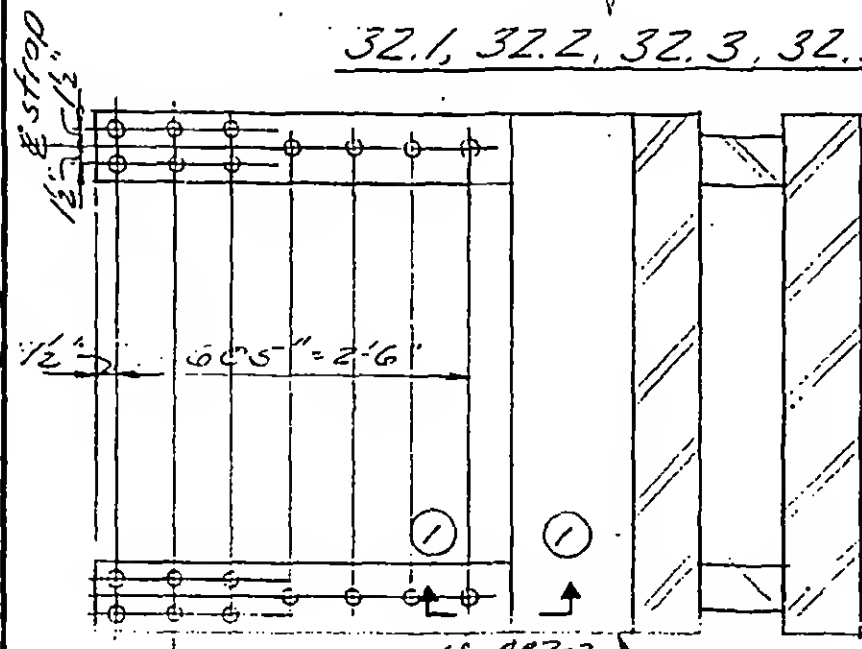
4-30-69

5-28-69



Straps to be placed in line with edge of column

32.1, 32.2, 32.3, 32.9, 32.13-32.19

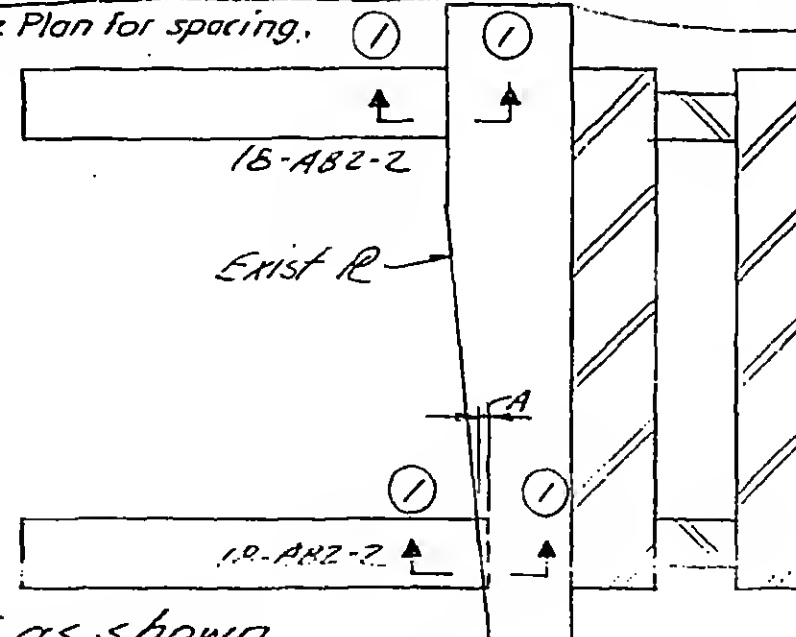


18-AB2-2
Exist R
32.4, 32.10, 32.11

See Note 6, 18-AB2-2

| Detail No | Strap | Studs | Elev | Section ① ① | Cut A |
|-----------|--------------|-------|----------|-------------|-------|
| 32.1 | 4x1/2x2'-6" | 5/8 | (-5) | a-a | - |
| 32.2 | 5x3/4x2'-6" | 5/8 | (-6 1/2) | a-a | - |
| 32.3 | 6x1/2x4'-6" | 9/8 | (-5 3/8) | b-b | - |
| 32.4 | 6x3/8x3'-0" | 10/8* | (-3) | b-b | - |
| 32.5 | 4x1/2x3'-0" | 5/8 | (-5 3/4) | b-b | 7/8 |
| 32.6 | 4x1/2x5'-0" | 5/8 | (-5 3/4) | b-b | 7/8 |
| 32.7 | 6x3/8x4'-6" | 9/8 | (-3) | b-b | - |
| 32.8 | 4x1/2x3'-6" | 7/8 | (-3 1/4) | c-c | 13/8 |
| 32.9 | 10x3/8x4'-6" | 8/4 | (-5 3/8) | b-b | - |
| 32.10 | 8x1/2x3'-0" | 10/8* | (-3 1/4) | b-b | - |
| 32.11 | 8x1/2x3'-0" | 10/8* | (-4 3/4) | b-b | - |
| 32.12 | 4x1/2x3'-6" | 6/8 | (-3 1/4) | b-b | 3/4 |
| 32.13 | 6x1/2x2'-6" | 2x4/8 | (-5 1/4) | b-b | - |
| 32.14 | 4x1/2x3'-6" | 6/8 | (-5 1/4) | b-b | - |
| 32.15 | 6x1/2x2'-6" | 4/8 | (-6 3/4) | a-a | - |
| 32.16 | 4x1/2x2'-6" | 4/4 | (-6 7/8) | a-a | - |
| 32.17 | 4x1/2x2'-6" | 4/4 | (-6 3/8) | a-a | - |
| 32.18 | 3x1/2x2'-6" | 3/4 | (-7) | a-a | - |
| 32.19 | 3x3/8x2'-6" | 3/8 | (-6 7/8) | a-a | - |

* See Plan for spacing.



32.5 as shown
32.6, 32.7 & 32.12 opp hand

18-AB2-32



52

DESIGNED
S. O'Hara
DRAWN
S. Wexler
REVIEWED
W. Brewer

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

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TITLE STRAP ANCHORS - CORE - DETAIL 33

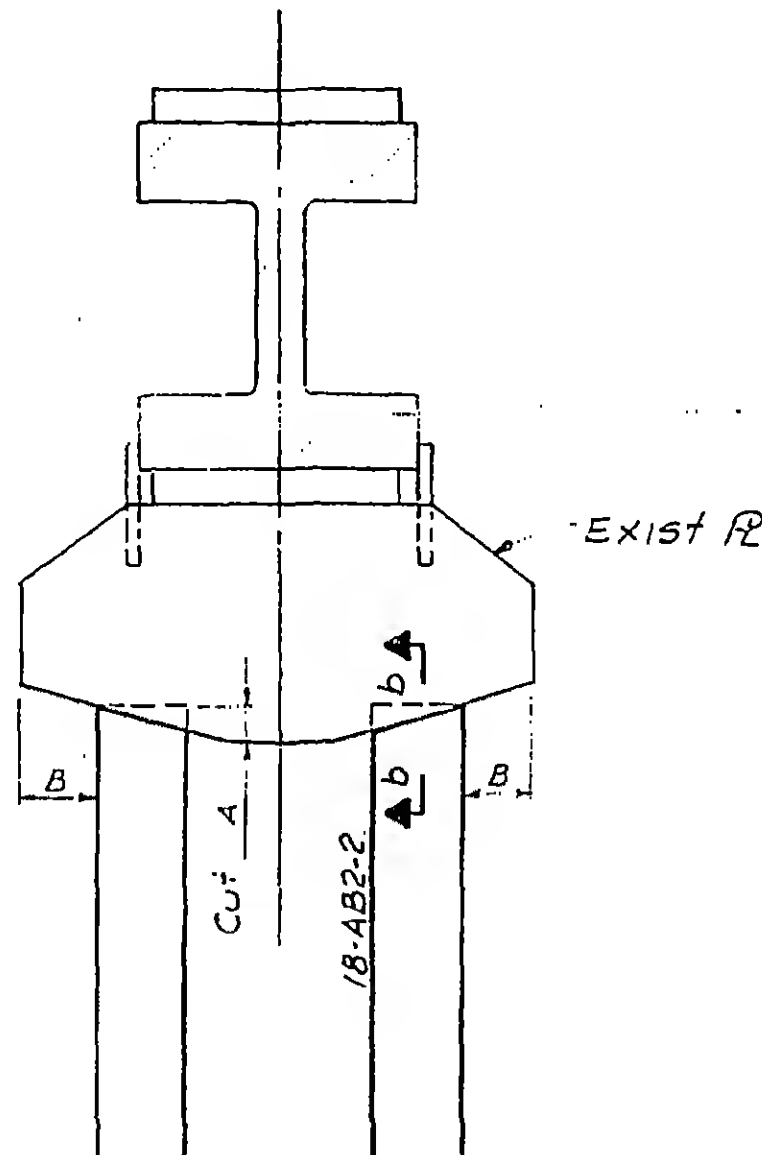
DATE 12-13-68

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2-7-69

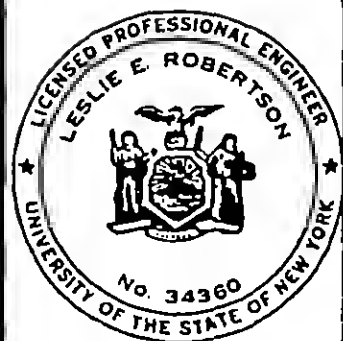
4-30-69

5-28-69



See Note 6 18-AB2-2

| Detail No. | Strap | Studs | Elev. | Dim. A | Dim B |
|------------|-------------------|----------|----------|--------|--------|
| 33.1 | 6" x 1/2" x 2'-6" | 5/78 | (-6 3/4) | 1 3/8" | 4 1/2" |
| 33.2 | 3" x 3/8" x 1'-6" | 3/58 | (-3 3/8) | 1/2" | 4" |
| 33.3 | 6" x 1/2" x 2'-0" | 2 x 4/78 | (-3 1/4) | 1/2" | 6" |
| 33.4 | 6" x 1/2" x 2'-6" | 2 x 5/58 | (-3 1/4) | 1/2" | 4 1/2" |
| 33.5 | 3" x 3/8" x 1'-6" | 3/58 | (-3 3/8) | 1/2" | 5" |
| 33.6 | 3" x 3/8" x 1'-6" | 3/58 | (-6 7/8) | 1/2" | 4" |



33

DESIGNED

L. E. Robertson

DRAWN

S. Wexler

REVIEWED

W. Brewer

18-AB2-33

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TITLE STRAP ANCHORS - CORE - DETAIL 34

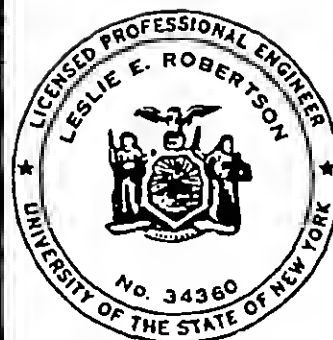
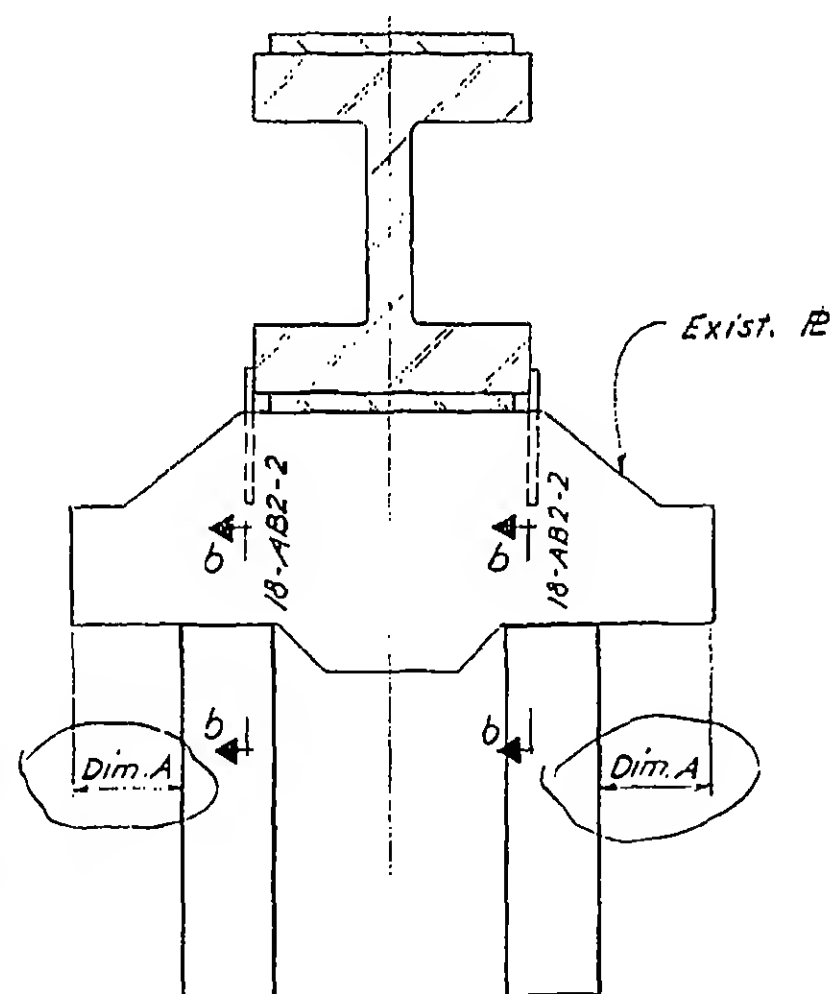
DATE 2-7-69

REVISIONS

4-30-69

See Note 6 18-AB2-2

| Detail No. | Strap | Studs | Elev. | Dim. A |
|------------|-----------------|----------|--------|--------|
| 34.1 | 6 x 1/2 x 2'-0" | 2 x 4/58 | (-3/4) | 7 1/2" |
| 34.2 | 6 x 1/2 x 2'-0" | 2 x 4/58 | (-3/4) | 6 3/4" |
| | | | | |
| | | | | |



54

DESIGNED

F. Smith

DRAWN

F. Smith

REVIEWED

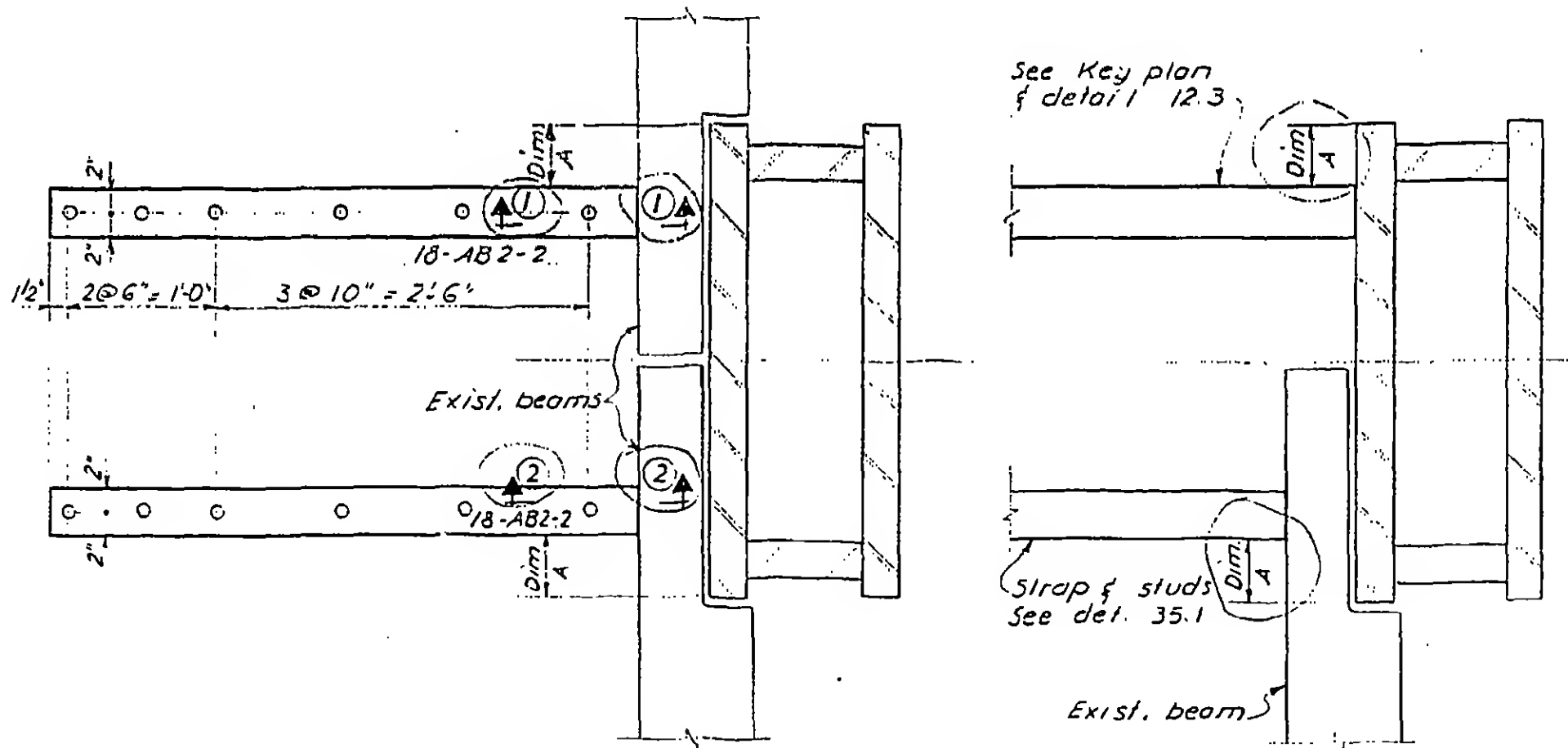
W. Brewer

18-AB2-34

REVISIONS

4-30-69

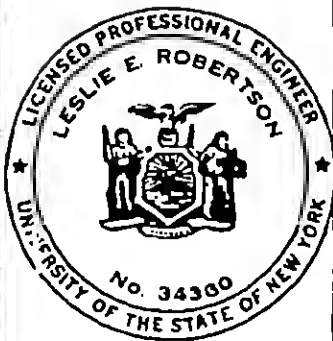
| Detail No. | Strap | Studs | Elev. | Dim. A | Section (1) | Section (2) |
|------------|-------------------|-------|----------|--------|-------------|-------------|
| 35.1 | 4" x 1/2" x 4'-0" | 5/8" | (-3 1/2) | 5" | C-C | C-C |
| 35.2 | 4" x 1/2" x 4'-0" | 5/8" | (-3 1/2) | 4 1/2" | - | C-C |
| 35.3 | 4" x 1/2" x 4'-0" | 5/8" | (-3 1/2) | 1/2" | C-C | C-C |
| 35.4 | 4" x 1/2" x 4'-0" | 5/8" | (-3 1/2) | 1/2" | e-e | C-C |



DETAIL 35.1, 35.3 & 35.4

DETAIL 35.2

18-AB2-35



DESIGNED

L. E. Robertson

DRAWN

F. Smith

REVIEWED

W. Brewer

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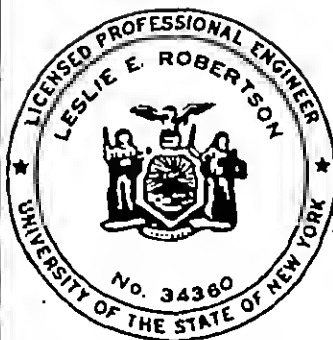
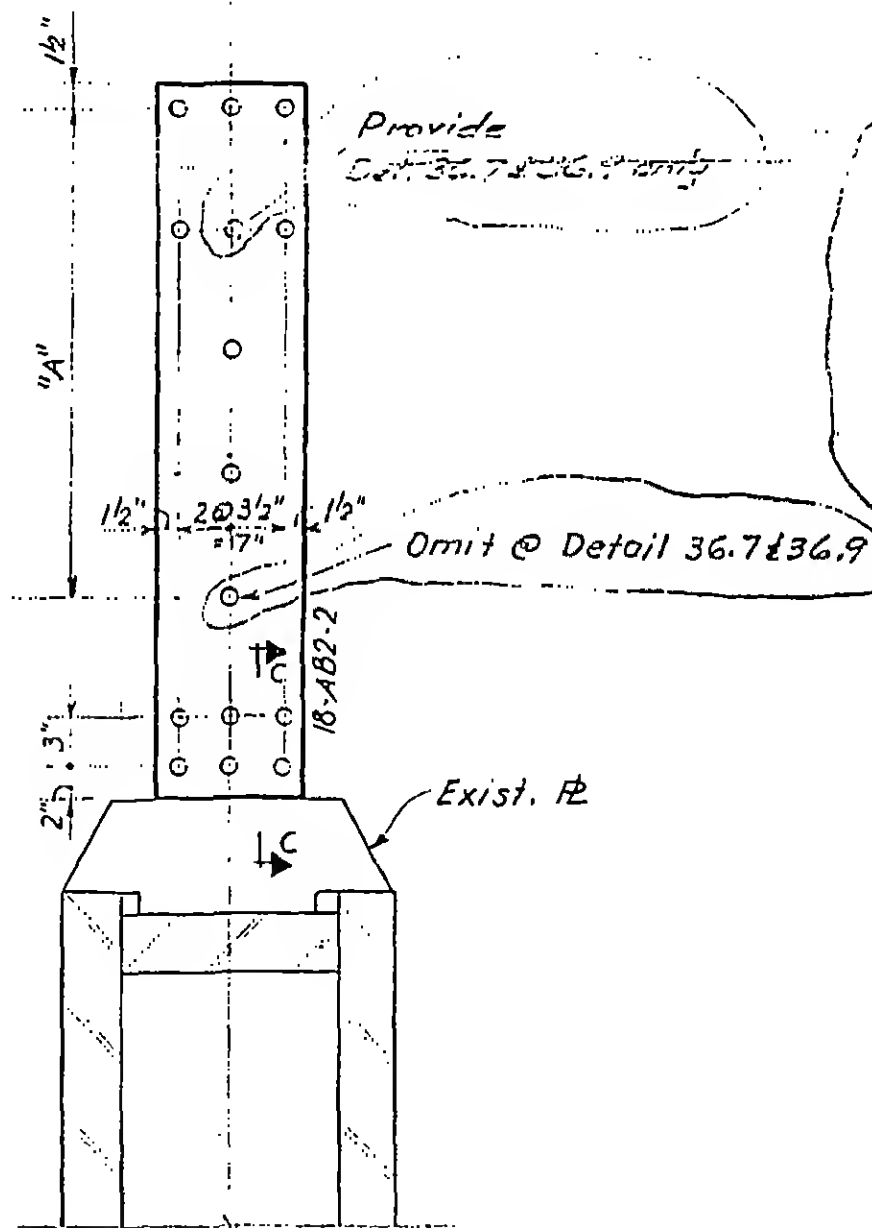
TITLE STRAP ANCHOR - CORE - DETAIL 36

DATE 2-7-69

REVISIONS

4-30-69

| Detail No. | Strap | Studs | Elev. | "A" |
|------------|-------------------------|-------|-----------|----------------------|
| 36.1 | 10" x 1/2" x 3'-10 1/2" | 3/4" | (-3 1/2') | 4 @ 8" - 2'-8" |
| 36.2 | 10" x 1/2" x 3'-4 1/2" | 3/4" | (-3 1/2') | 4 @ 7" - 2'-4" |
| 36.3 | 10" x 1/2" x 3'-0 1/2" | 3/4" | (-3 1/2') | 4 @ 6" - 2'-0" |
| 36.4 | 10" x 1/2" x 2'-8 1/2" | 3/4" | (-3 1/2') | 4 @ 5" - 1'-8" |
| 36.5 | 10" x 1/2" x 3'-3 1/2" | 3/4" | (-3 1/2') | 4 @ 7" - 2'-4" |
| 36.6 | 10" x 1/2" x 2'-4 1/2" | 3/4" | (-3 1/2') | 4 @ 4" - 1'-4" |
| 36.7 | 10" x 1/2" x 1'-8 1/2" | 3/4" | (-3 1/2') | 3 @ 3 1/2" - 10 1/2" |
| 36.8 | 10" x 1/2" x 2'-7 1/2" | 3/4" | (-3 1/2') | 4 @ 4 3/4" - 1'-7" |
| 36.9 | 10" x 1/2" x 1'-10 1/2" | 3/4" | (-3 1/2') | 4 @ 3" - 1'-0" |
| 36.10 | 10" x 1/2" x 2'-9 1/2" | 3/4" | (-3 1/2') | 4 @ 5" - 1'-8" |
| 36.11 | 10" x 1/2" x 3'-6 1/2" | 3/4" | (-3 1/2') | 4 @ 7" - 2'-4" |
| | | | | |
| | | | | |



56

DESIGNED

F. Smith

DRAWN

F. Smith

REVIEWED

W. Brewer

18-AB2-36

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TITLE STRAP ANCHORS - CORE - DETAIL 37

| | |
|------|--------|
| DATE | 2.7.69 |
|------|--------|

REVISIONS

4-30-69

| Detail No. | "A" |
|------------|--------------------|
| 37 A | 8 @ 6" = 4'-0" |
| 37 B | 8 @ 7" = 4'-8" |
| 37 C | 8 @ 7 1/2" = 5'-0" |
| 37 D | 8 @ 8" = 5'-4" |
| 37 E | 8 @ 9" = 6'-0" |

Floor side

- Exist, \mathbb{R}^5

A.

3/4" studs

5" studs

Core side



57

DESIGNED

ملک عزیزان

OPAWN

F. Smith

REVIEW

REVIEWED
W. Brewer

18-AB2-37

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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THE WORLD TRADE CENTER

TITLE

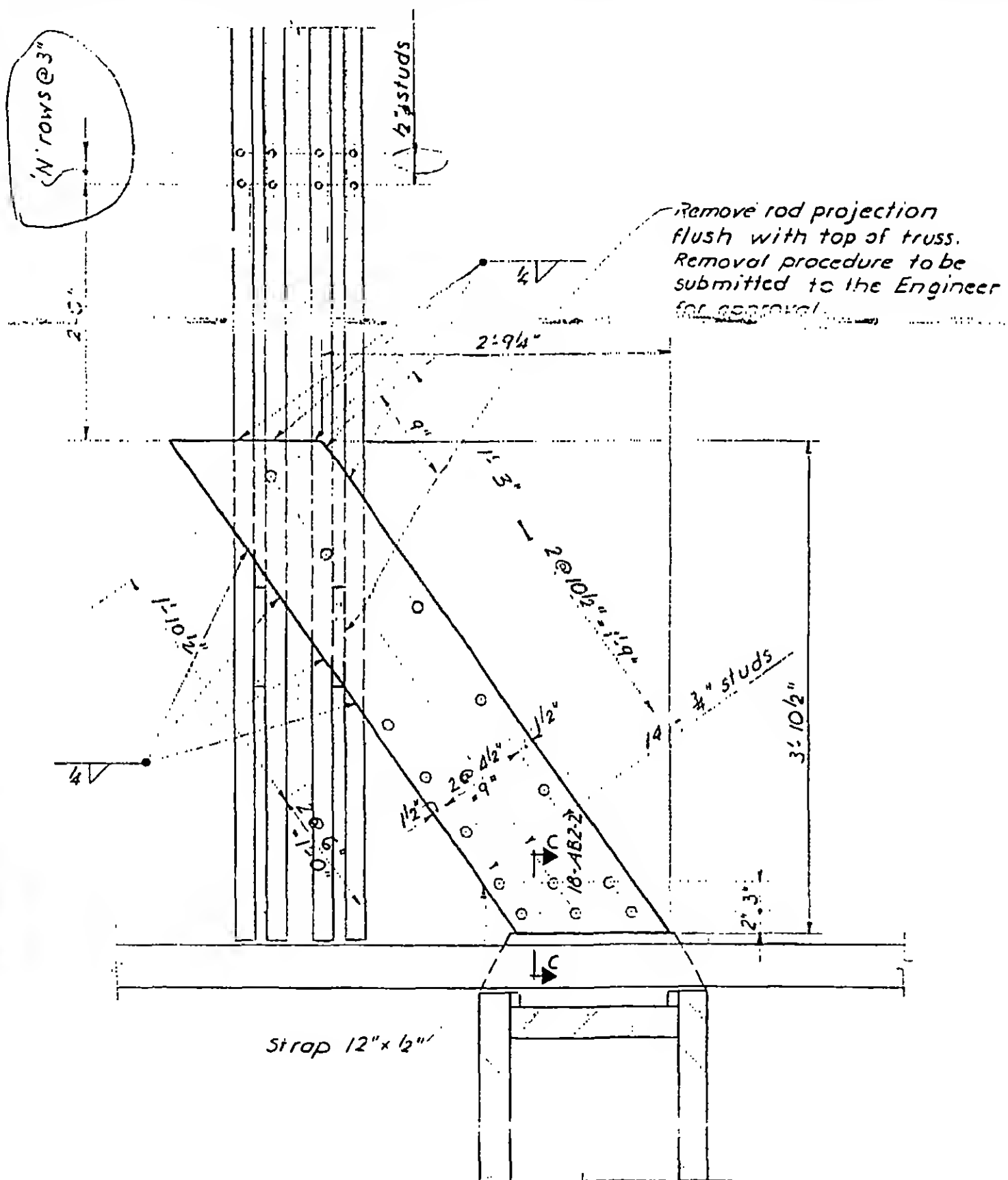
STRAP ANCHOR - CORE - DETAIL 38

DATE

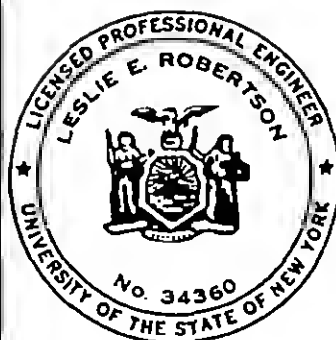
2-7-69

REVISIONS

4-30-69



| Detail No | N |
|-----------|---|
| 38.1 | 2 |
| 38.2 | 1 |
| | |



58

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L. E. RobertsonDRAWN
F. SmithREVIEWED
W. Brewer

18-AB2-38

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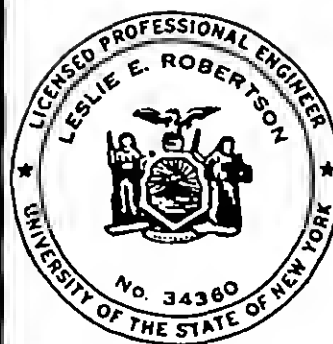
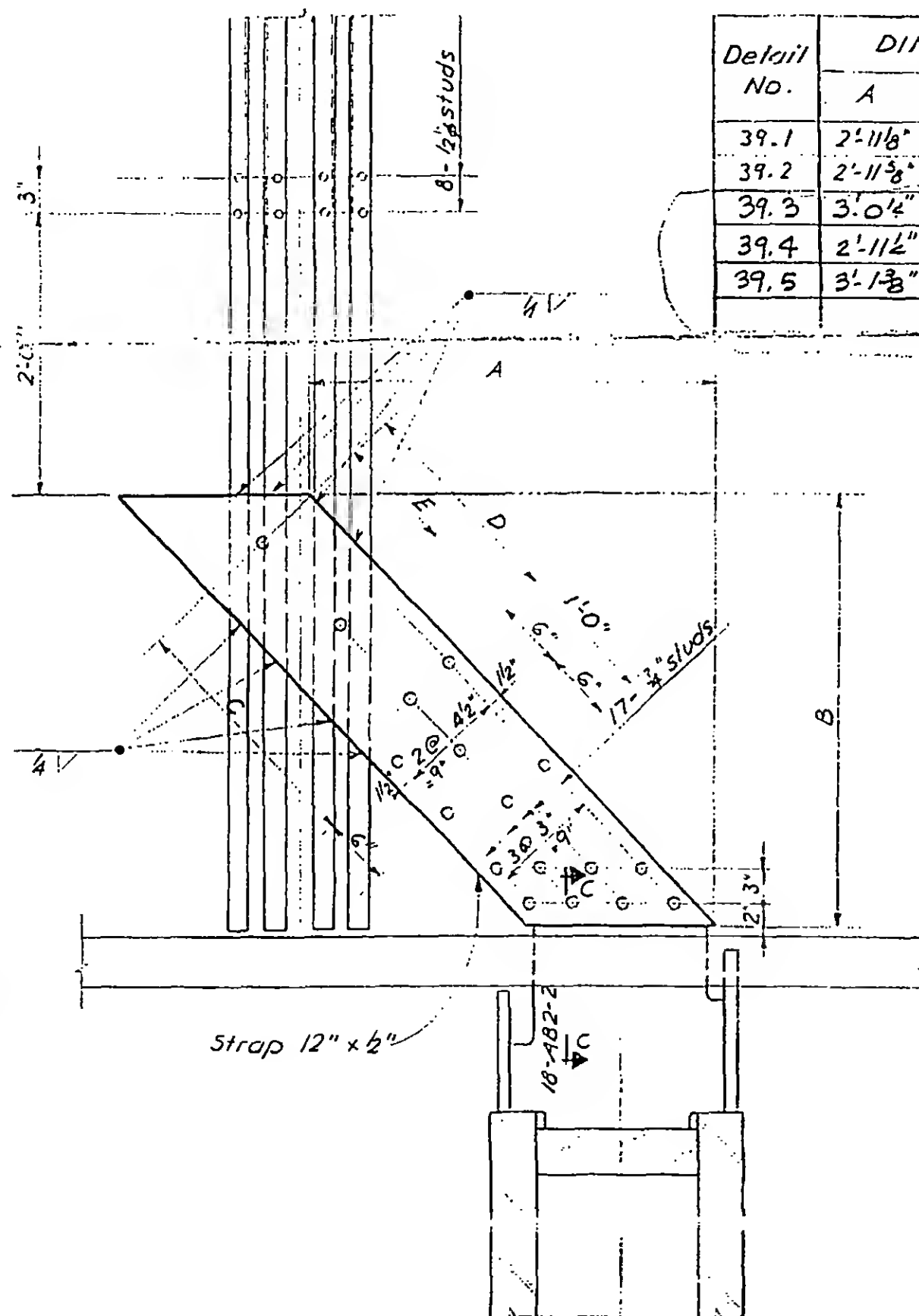
TITLE STRAP ANCHOR - CORE - DETAIL 39

| | |
|------|--------|
| DATE | 2-7-69 |
|------|--------|

REVISIONS

4/30/69

| Detail No. | DIMENSION SCHEDULE | | | | |
|---------------|--------------------|------------|-------|--------|-------|
| | A | B | C | D | E |
| 39.1 | 2'-11 1/8" | 3'-4 1/2" | 1'-9" | 1'-6" | 1'-0" |
| 39.2 | 2'-11 3/8" | 3'-0 1/2" | 1'-6" | 1'-3" | 10" |
| 39.3 | 3'-0 1/4" | 2'-7 1/2" | 1'-4" | 1'-2" | 9" |
| 39.4 | 2'-11 1/2" | 3'-3 1/2" | 1'-8" | 1'-5" | 1'-0" |
| 39.5 | 3'-1 3/8" | 1'-10 1/2" | 1'-0" | 0'-10" | 7" |
| | | | | | |



59

| |
|--------------------|
| DESIGNED |
| <i>A. C. Smith</i> |
| DRAWN |
| <i>F. Smith</i> |
| REVIEWED |
| <i>W. Brewer</i> |

18-AB2-39

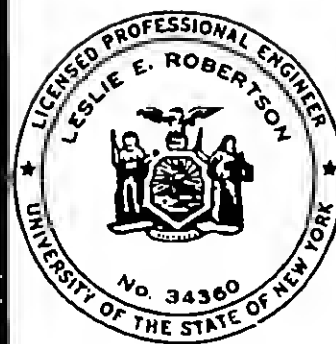
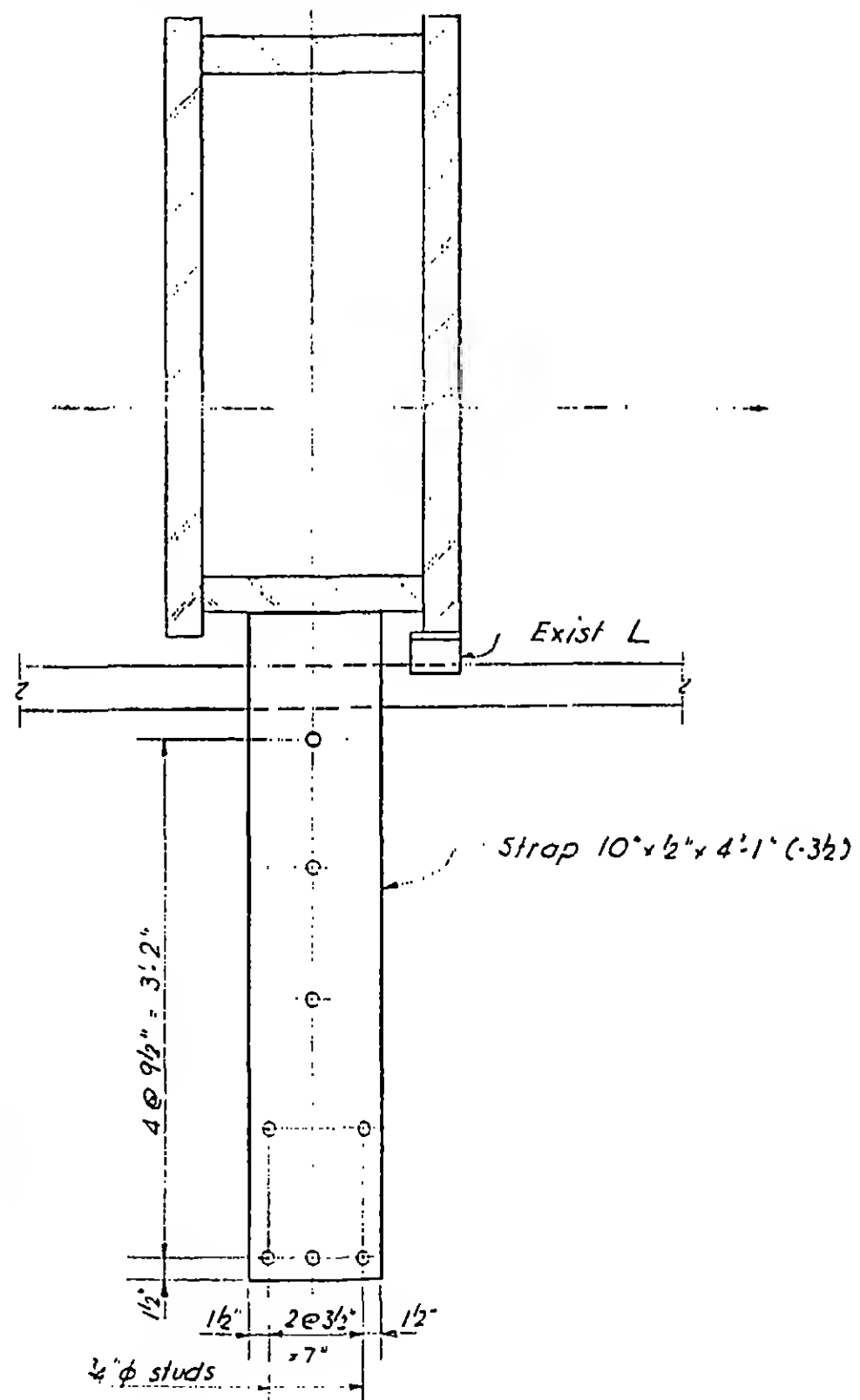
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TITLE STRAP ANCHOR - CORE - DETAIL 40

DATE 4/30/69

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F. Smith

REVIEWED
W. Brewer

18 - AB 2 - 40

1044-2, 2

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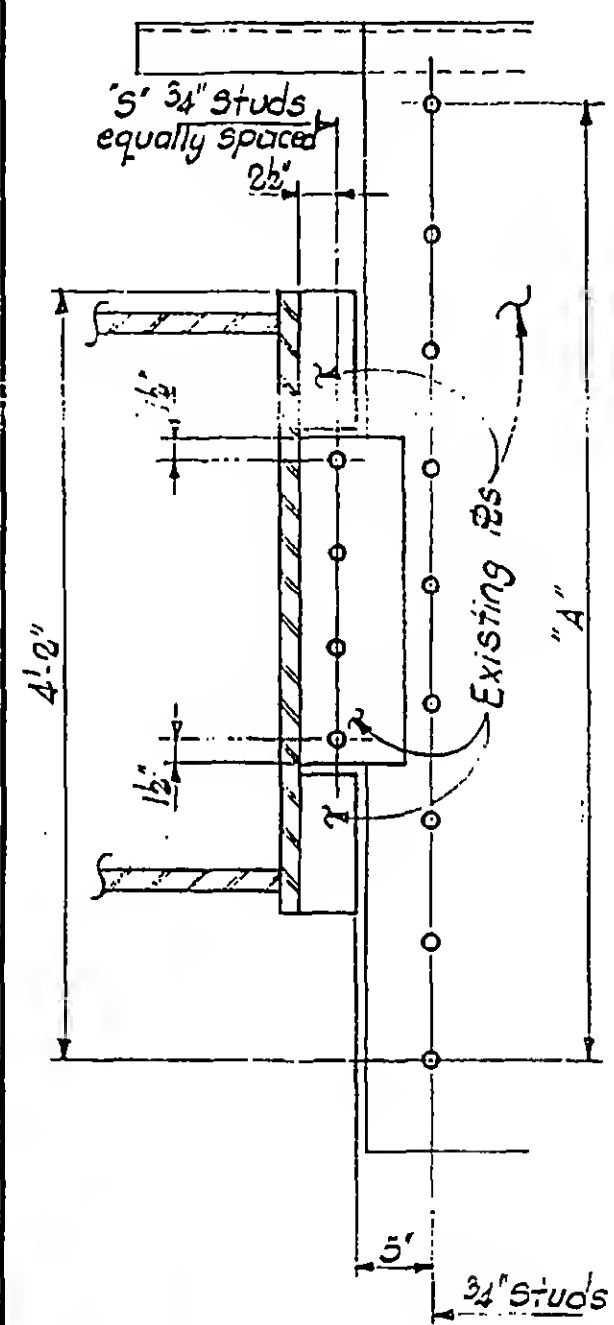
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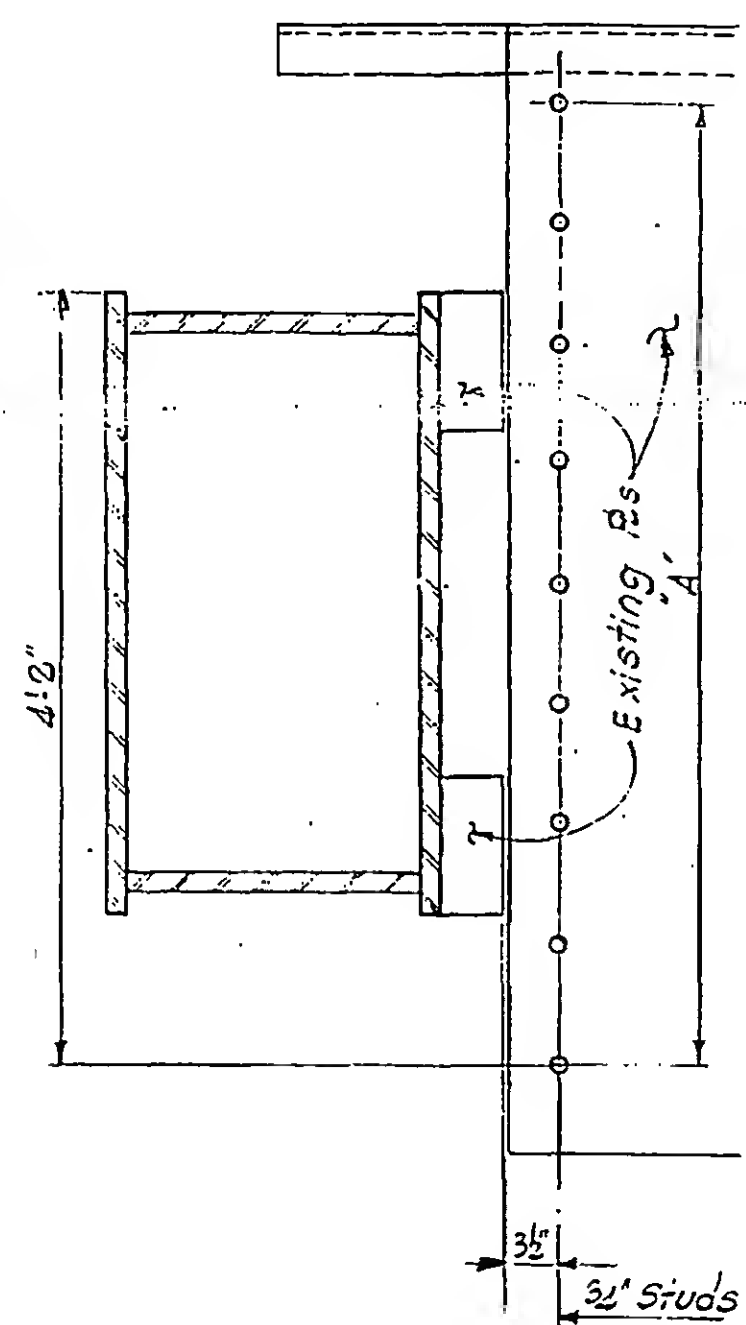
TITLE STRAP ANCHOR CORE DETAIL 41A THRU 41G

DATE 4-30-69

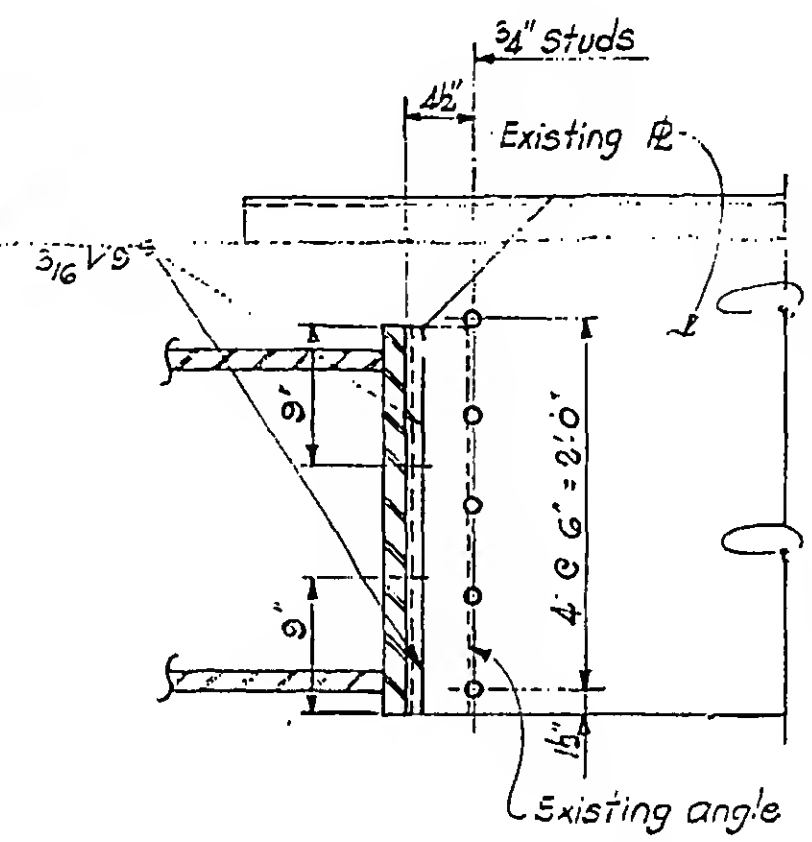
REVISIONS



DETAIL 41A THRU 41D

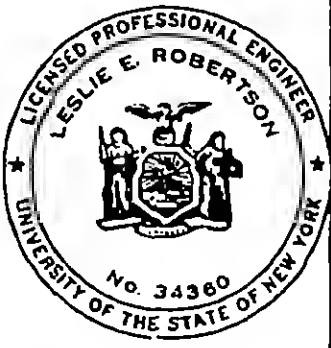


DETAIL 41E & 41F



DETAIL 41G

| DETAIL NO. | "A" | "S" |
|------------|--------------------|-----|
| 41A | 8 @ 6" = 4' 0" | 4 |
| 41B | 8 @ 7" = 4' 8" | 3 |
| 41C | 8 @ 5" = 5' 0" | 3 |
| 41D | 8 @ 9 1/2" = 6' 4" | 3 |
| 41E | 8 @ 9 1/2" = 6' 4" | — |
| 41F | 8 @ 7 1/2" = 5' 0" | — |



DESIGNED
DRAWN
S.T.M.
REVIEWED
W. Brewer

18-AB2-41

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

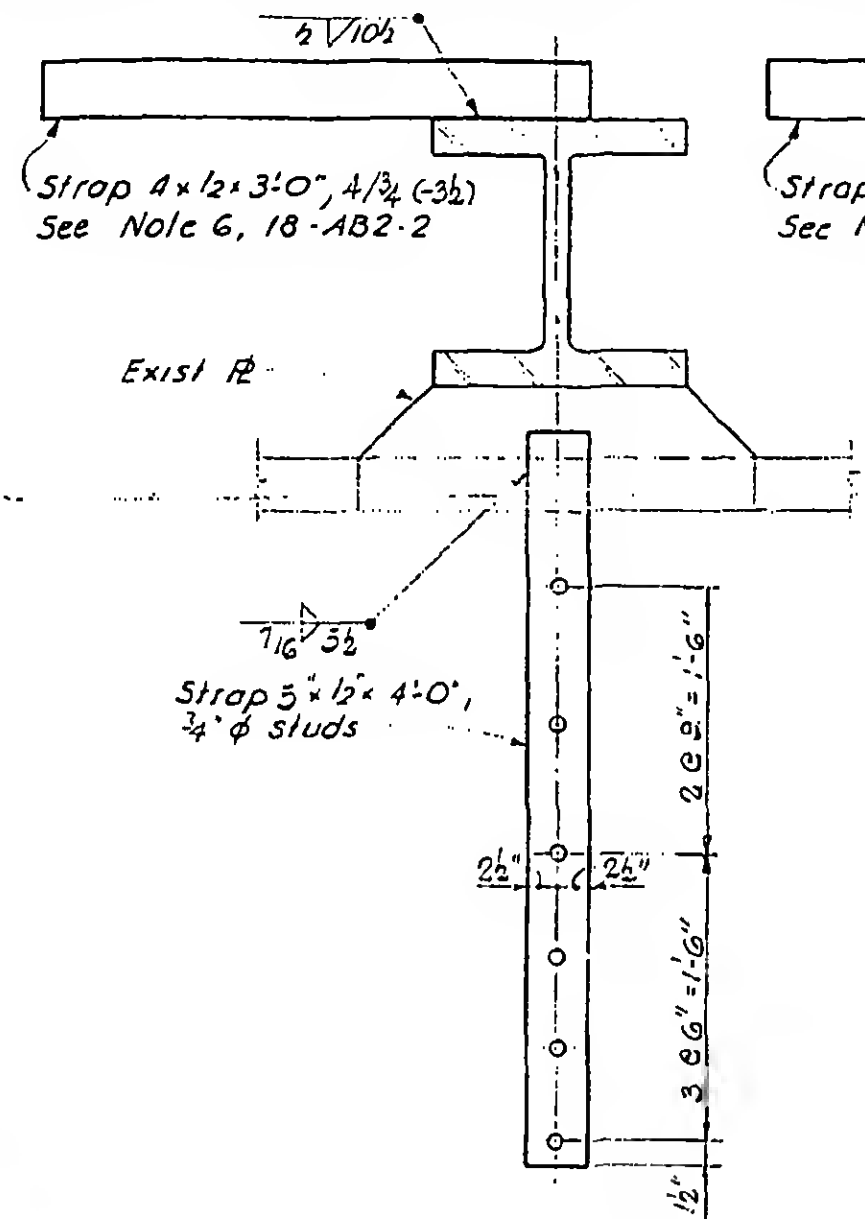
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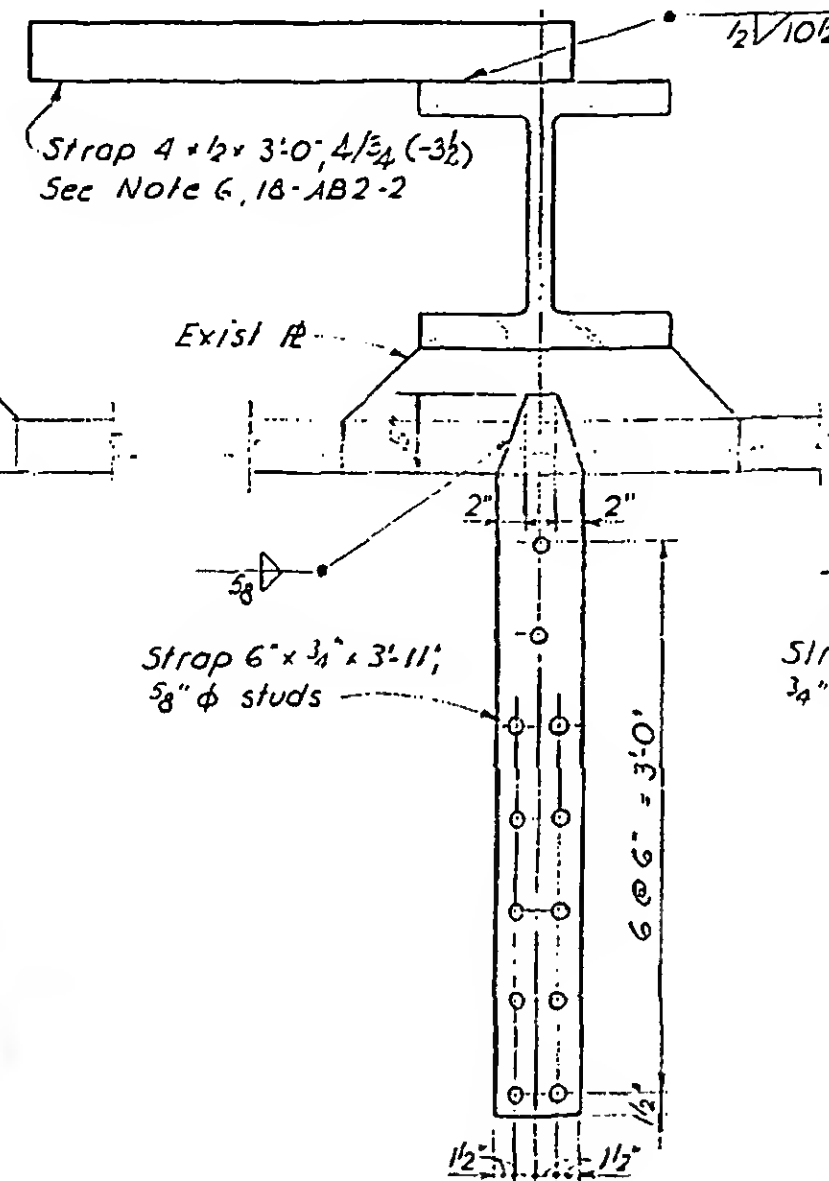
TITLE STRAP ANCHOR - CORE - DETAIL 42

DATE 4/30/69

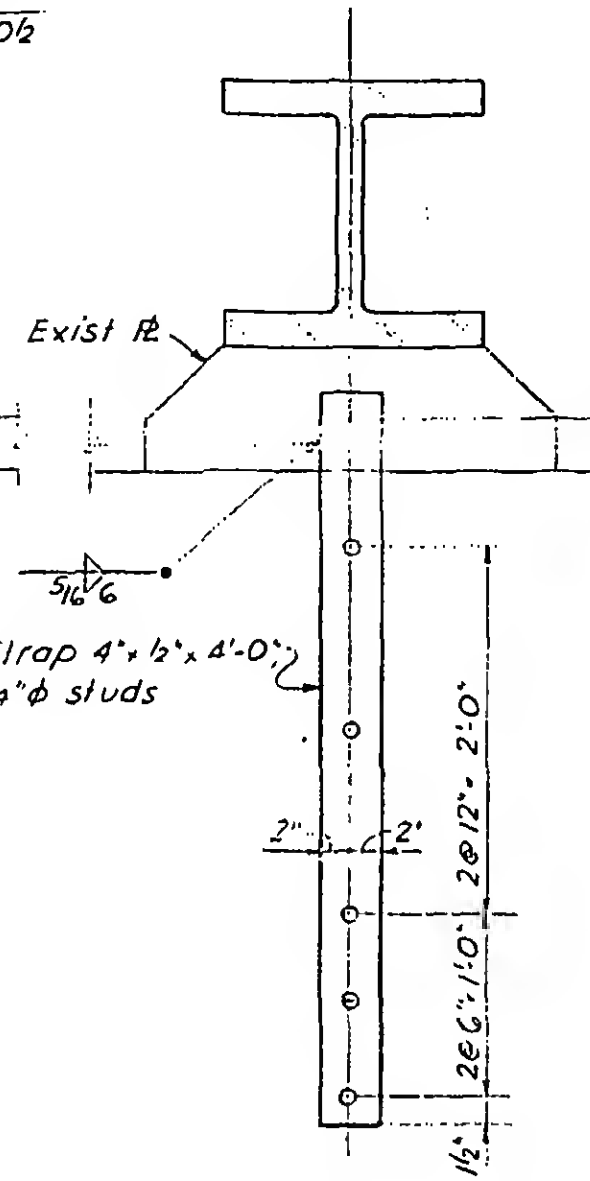
REVISIONS



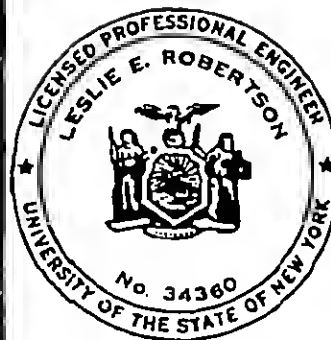
DETAIL 42.1



DETAIL 42.2



DETAIL 42.3



G.V.

DESIGNED

DRAWN
F. SmithREVIEWED
W. Brewer

18-AB2-42.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

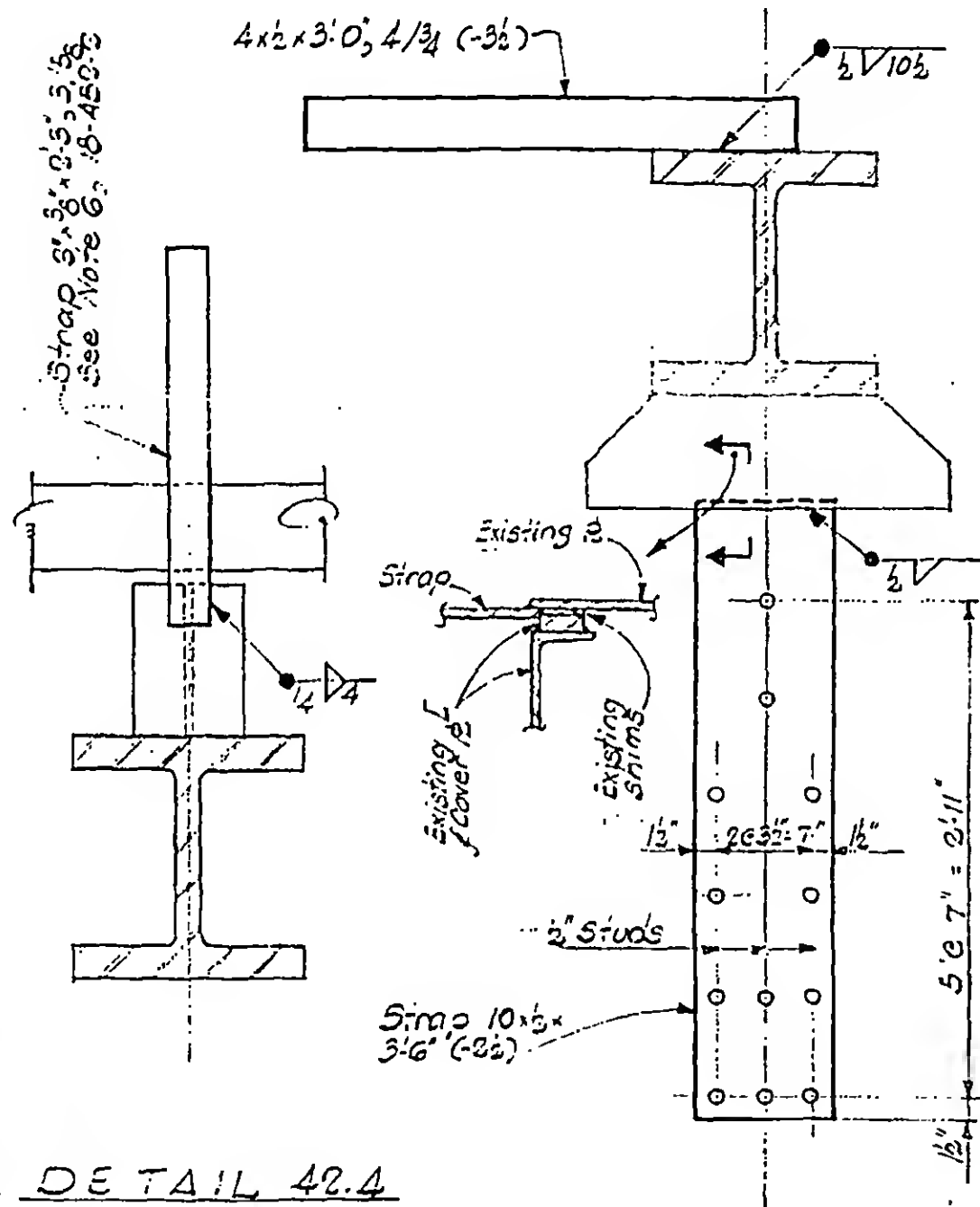
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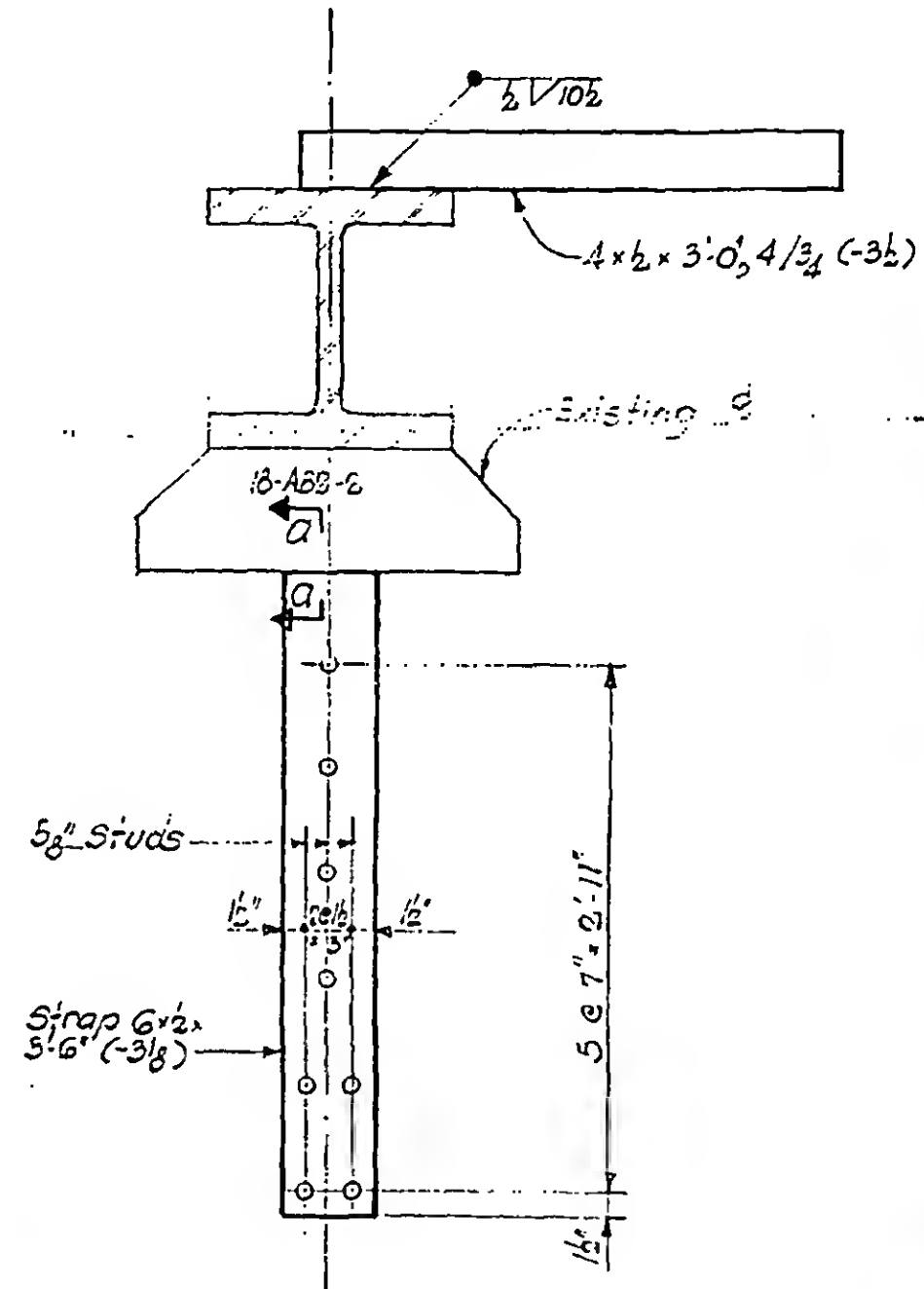
TITLE STRAP ANCHOR CORE DETAIL 42

DATE 4/30/69

REVISIONS

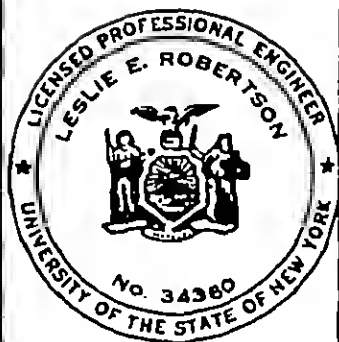


DETAIL 42.4



DETAIL 42.5

DETAIL 42.6



63

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DRAWN
S.T.M.

REVIEWED

W. Brewer

18-AB2-42.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

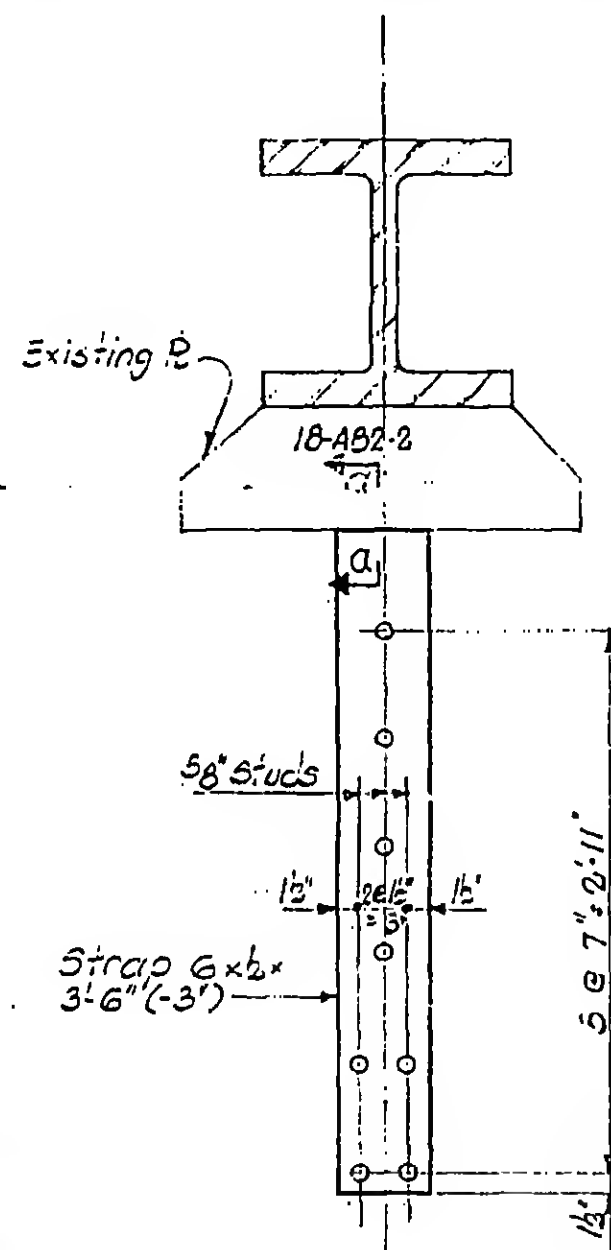
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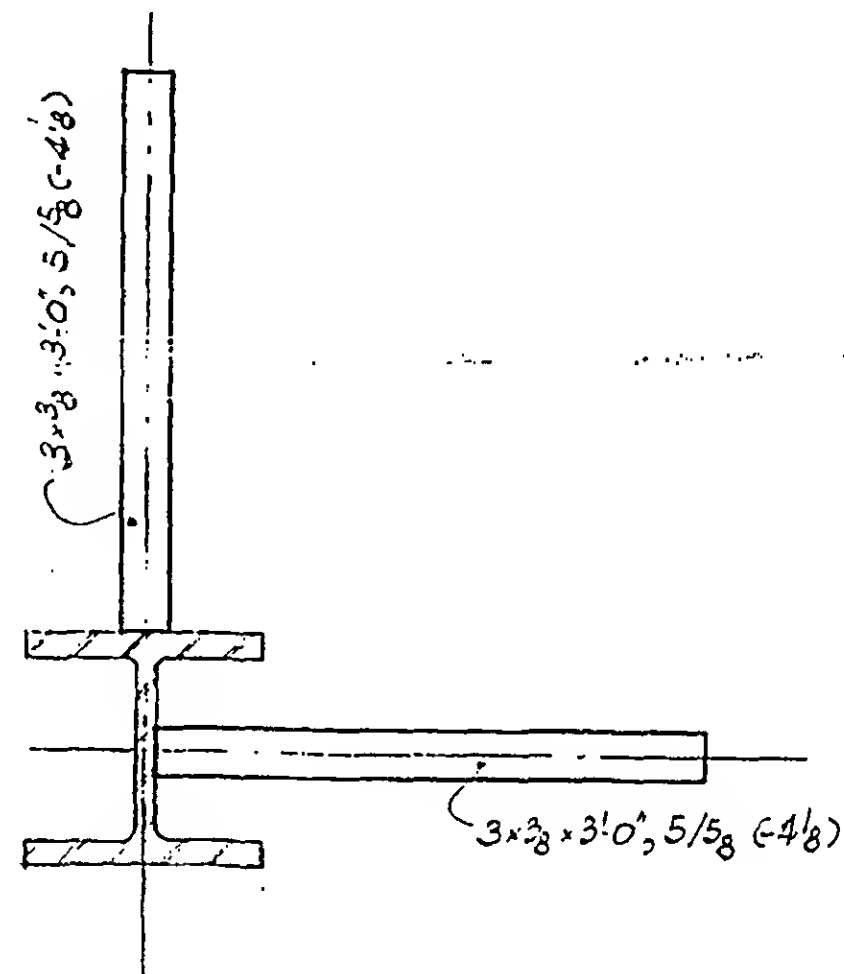
TITLE STRAP ANCHOR DETAIL 42

DATE 4/30/69

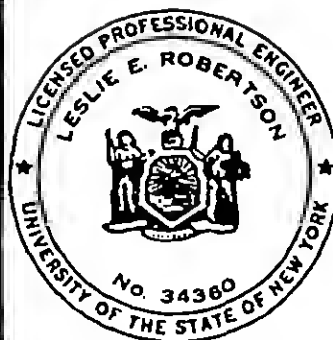
REVISIONS



DETAIL 42.7



DETAIL 42.8



64

DESIGNED

DRAWN
S.T.M.

REVIEWED

W. Brewer

18-AB2-42.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

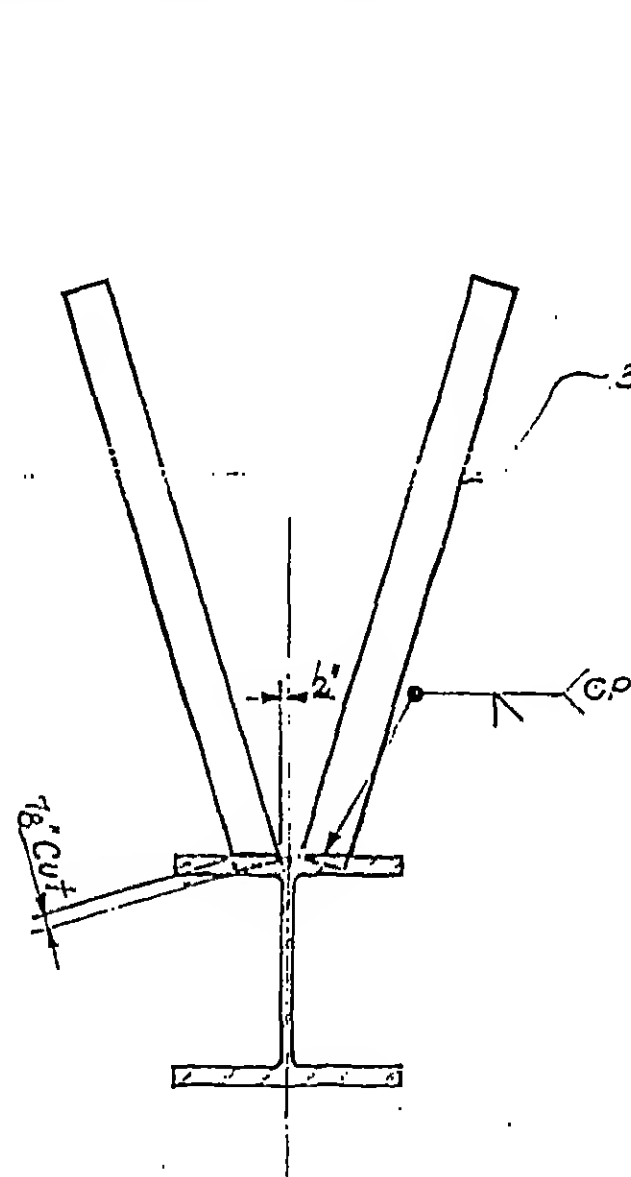
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

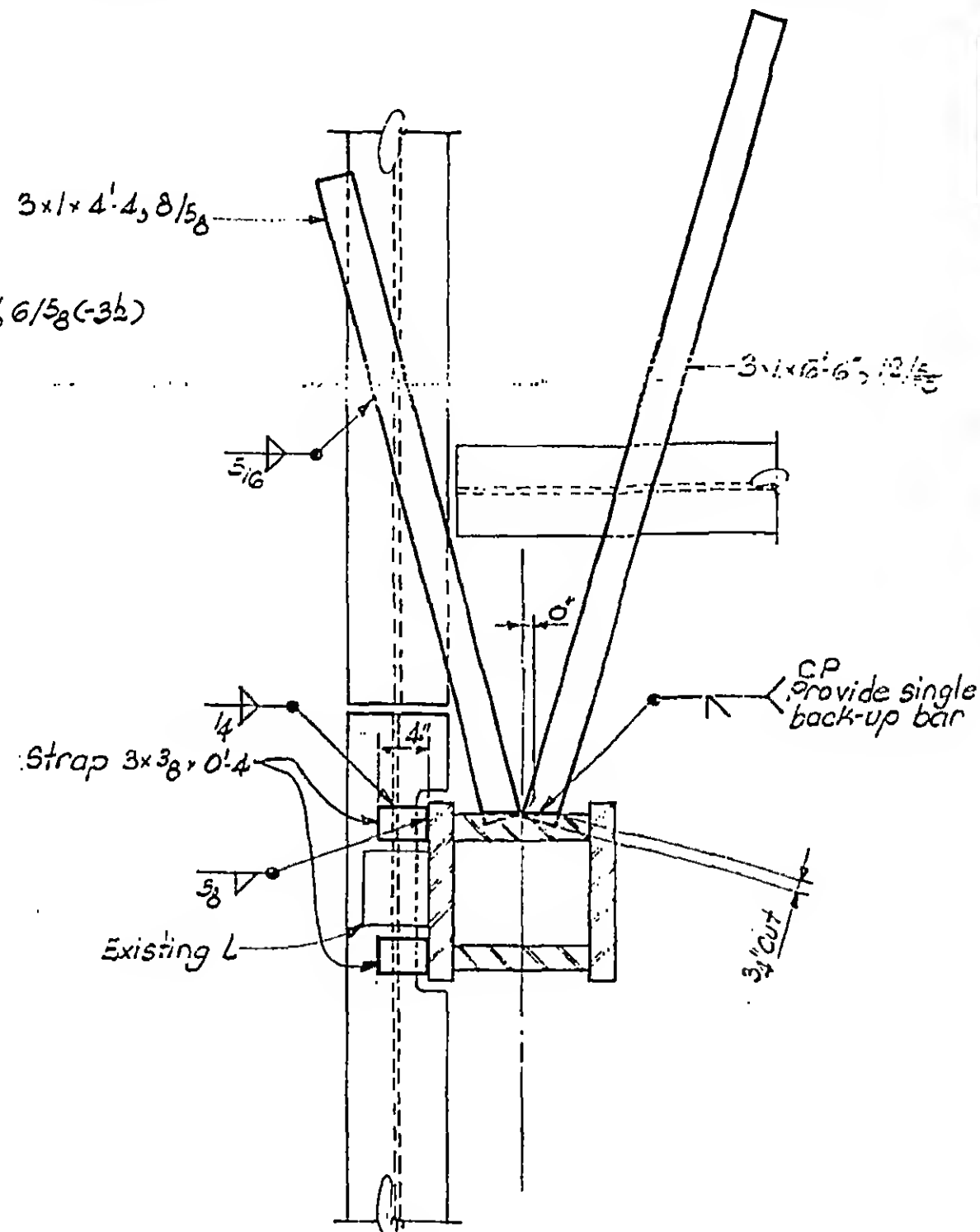
TITLE STRAP ANCHOR DETAIL 43

DATE 4/30/69

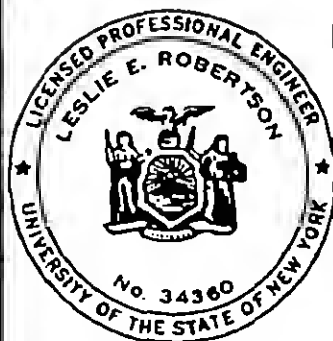
REVISIONS



DETAIL 43.1



DETAIL 43.2



65

DESIGNED

DRAWN
S.T.M.

REVIEWED

W. Brewer

18-AB2-43

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

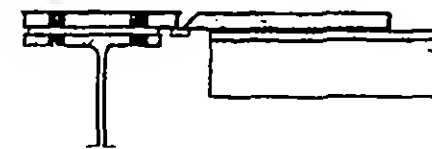
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PROJECT THE WORLD TRADE CENTER

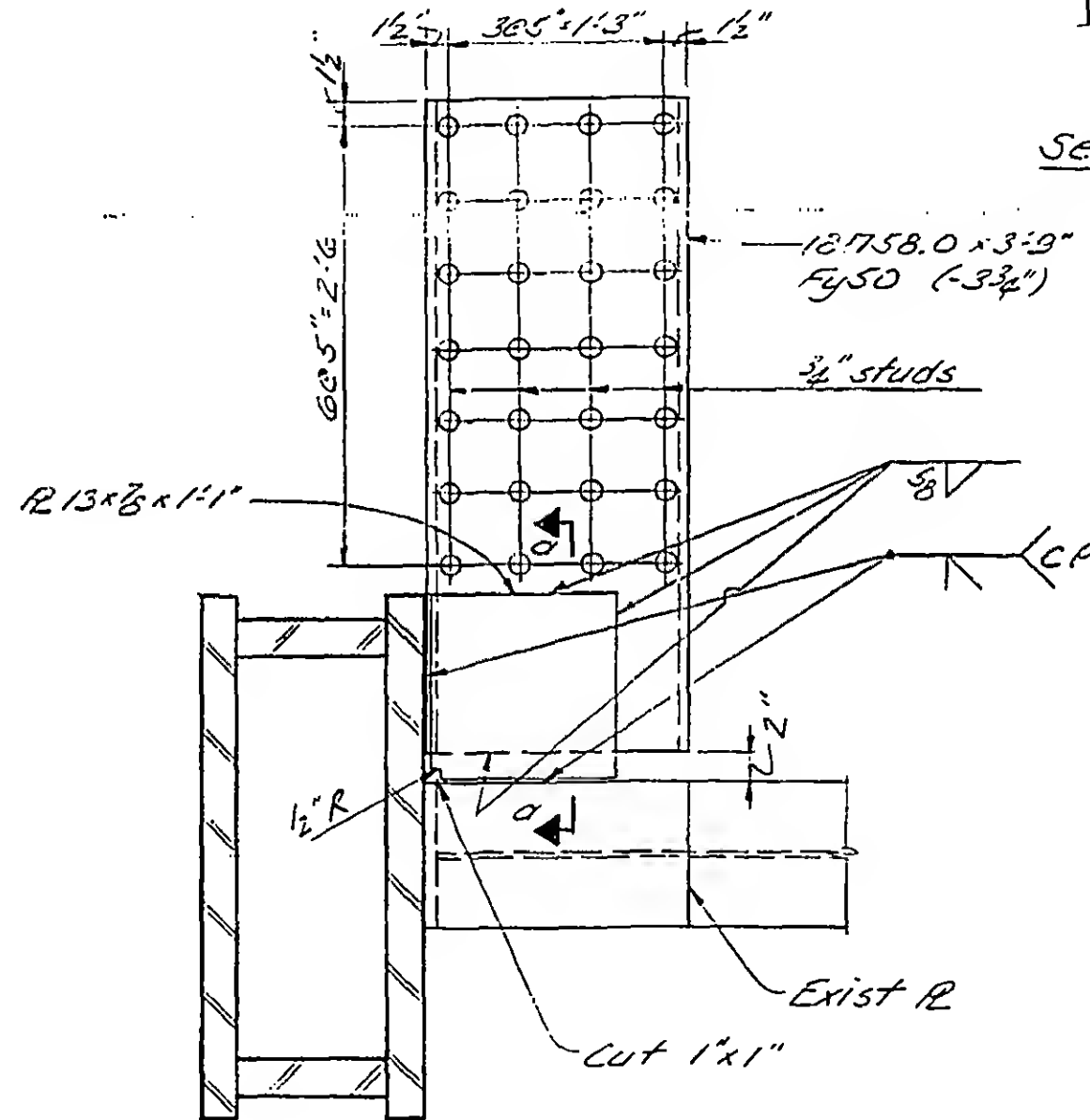
TITLE STRAP ANCHOR - CORE - DETAIL 44

DATE 5-20-69

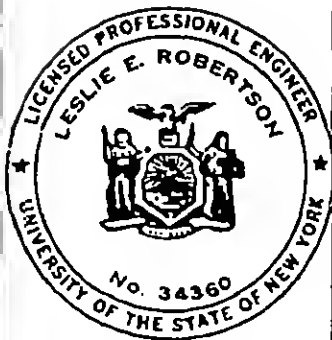
REVISIONS



Section a-a



PLAN



DESIGNED
J. Adams
DRAWN
J. Adams
REVIEWED
W. Brewer

18-ABZ-44

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

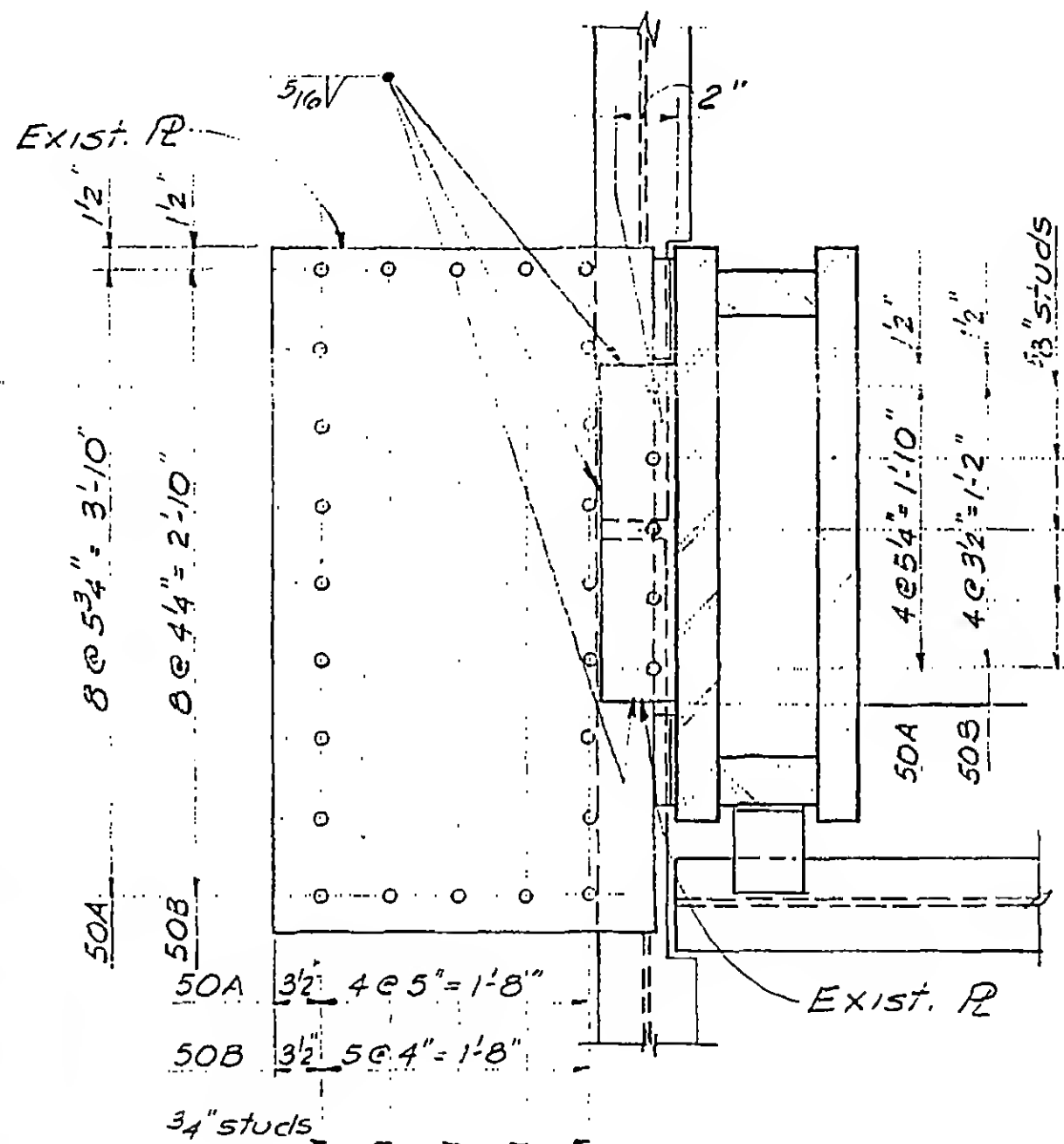
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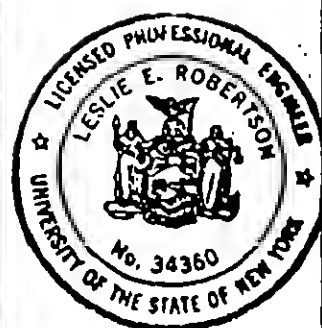
TITLE STRAP ANCHORS - CORE - DETAIL 50-

DATE 10/16/68

REVISIONS



DETAILS 50A, 50B



DESIGNED

W. H. H. H.

DRAWN

S. Wexler

REVIEWED

W. Brewer

18-AB2-50.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

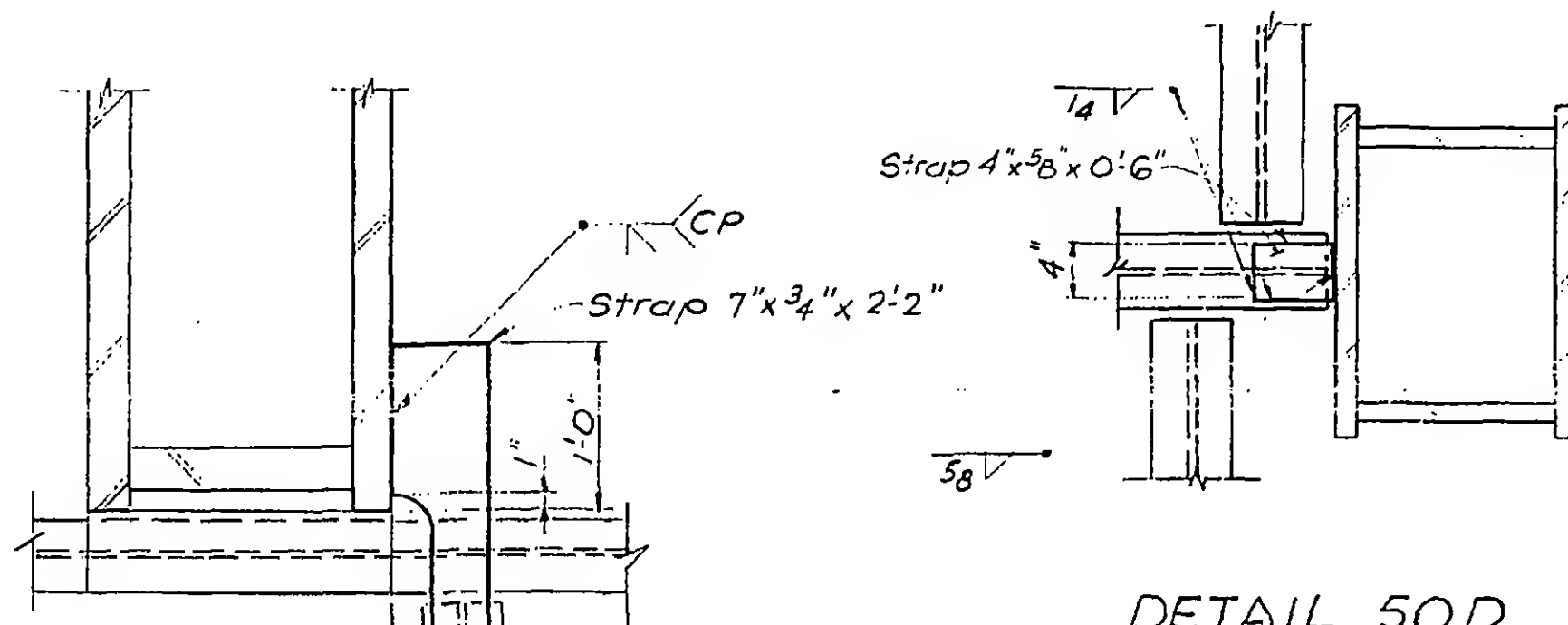
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TITLE STRAP ANCHORS - CORE - DETAIL 50

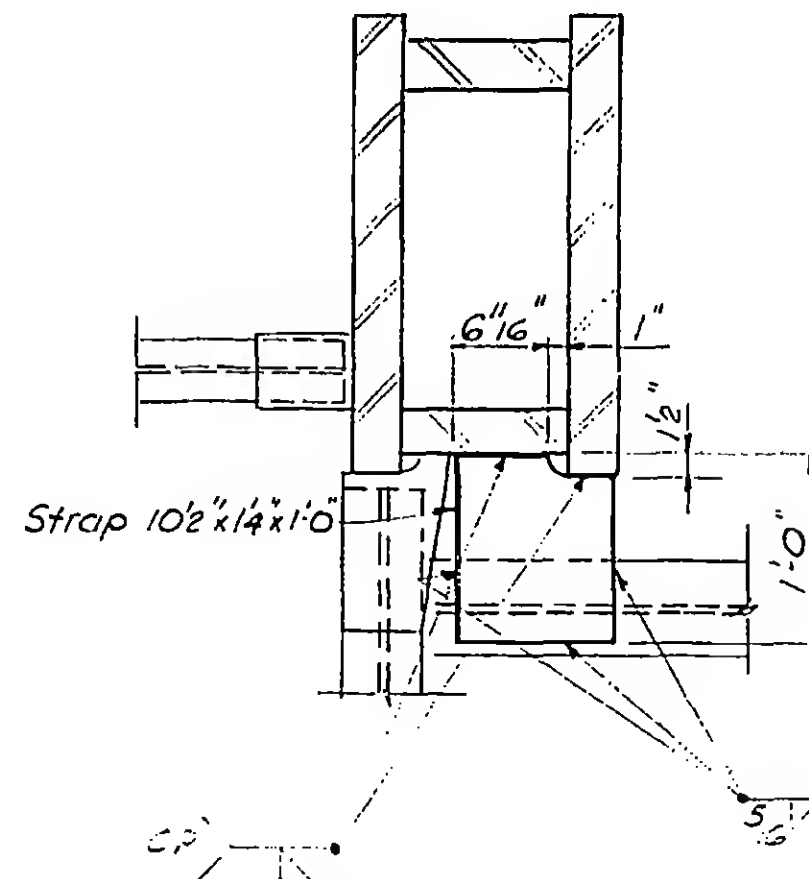
DATE 10/16/68

REVISIONS

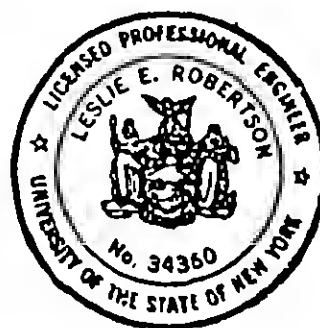


DETAIL 50D

DETAIL 50C



DETAIL 50E



DESIGNED
L. O'Neill
DRAWN
S. Wexler
REVIEWED
W. Brewster

18-AB2-50.2

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

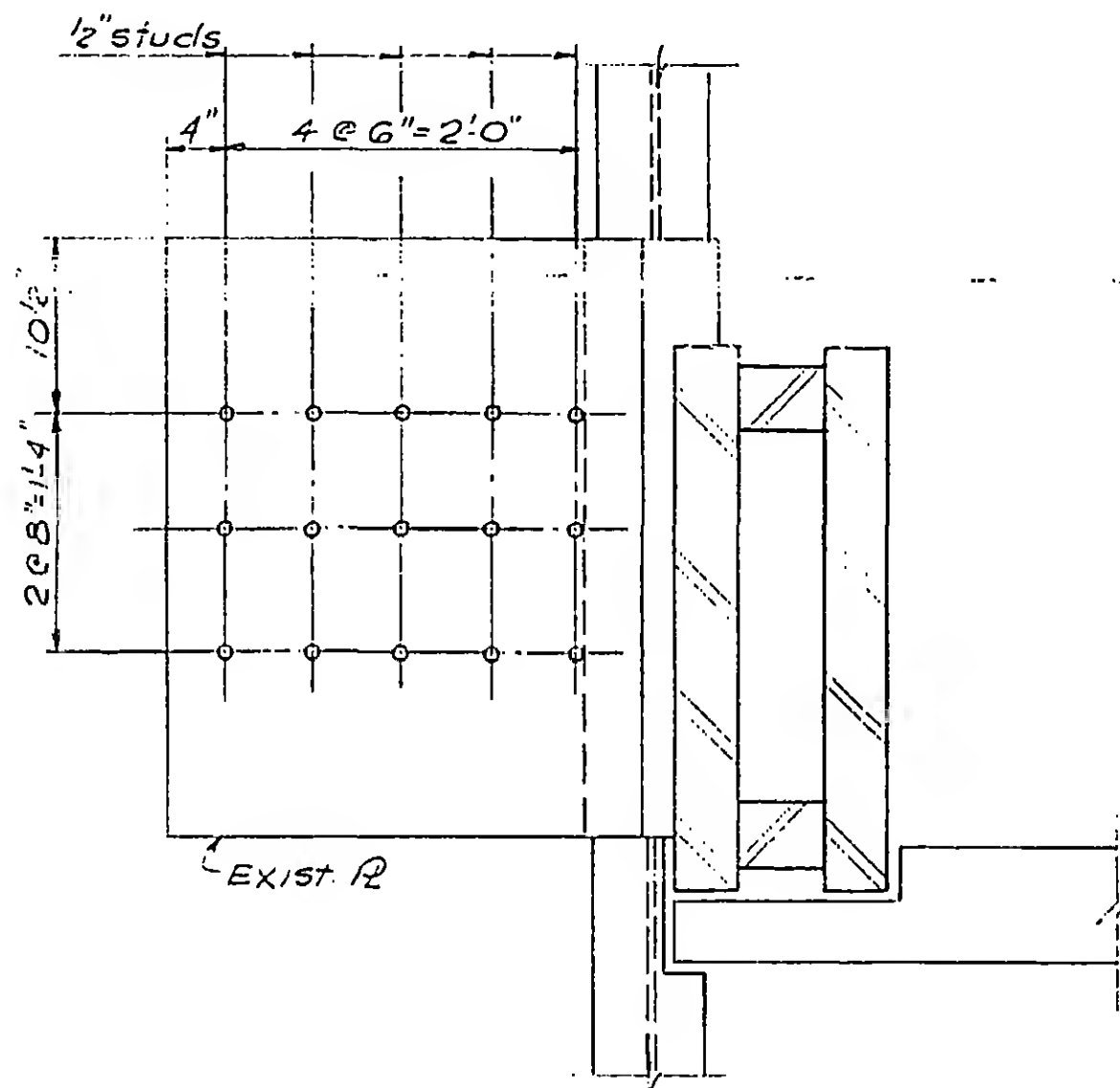
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - CORE - DETAIL 54

DATE 12-13-68

REVISIONS

DETAIL 54A

DESIGNED

S. Wexler

DRAWN

S. Wexler

REVIEWED

18-AB2-54.1

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

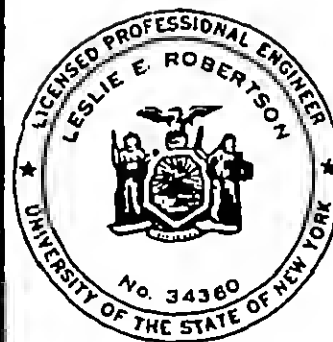
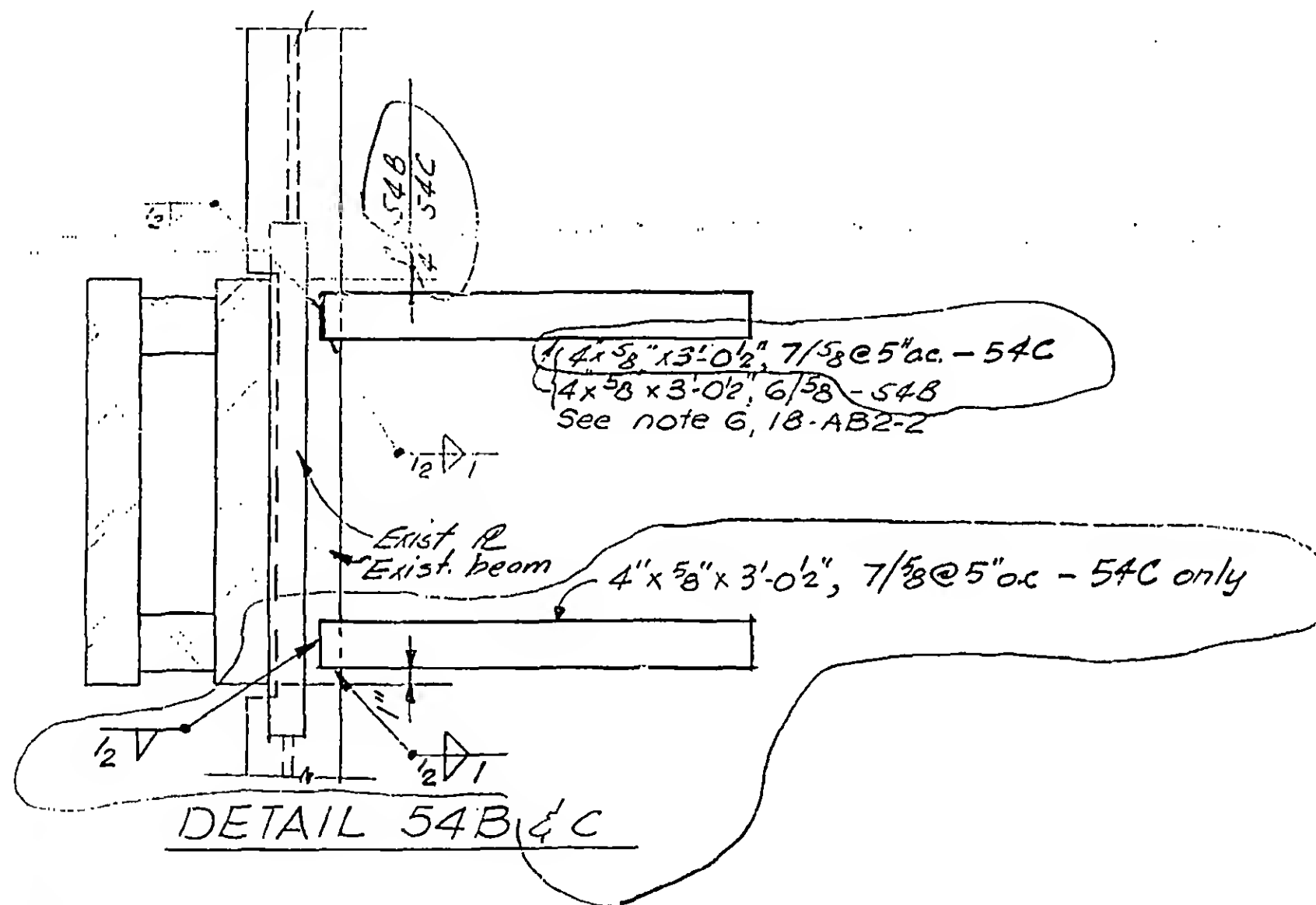
PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - CORE - DETAIL 54

DATE 12-13-68

REVISIONS

5-20-69



DESIGNED

L. O. H. C.

DRAWN

S. Wexler

REVIEWED

W. Brewer

18-AB2-54.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

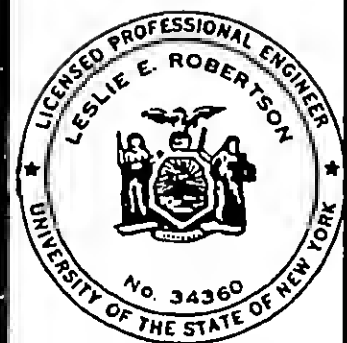
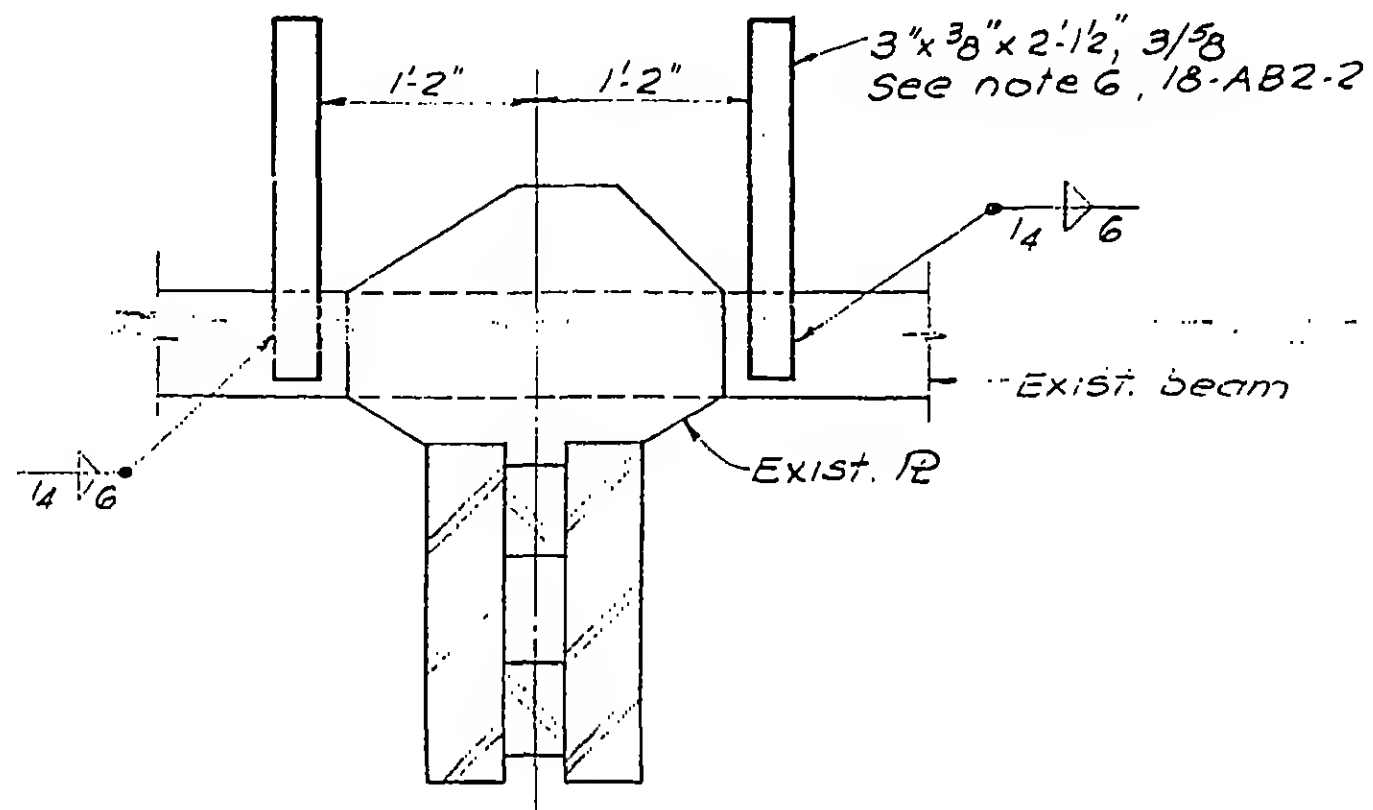
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - CORE - DETAIL 55

DATE 12-13-68

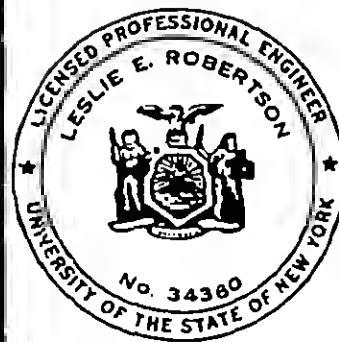
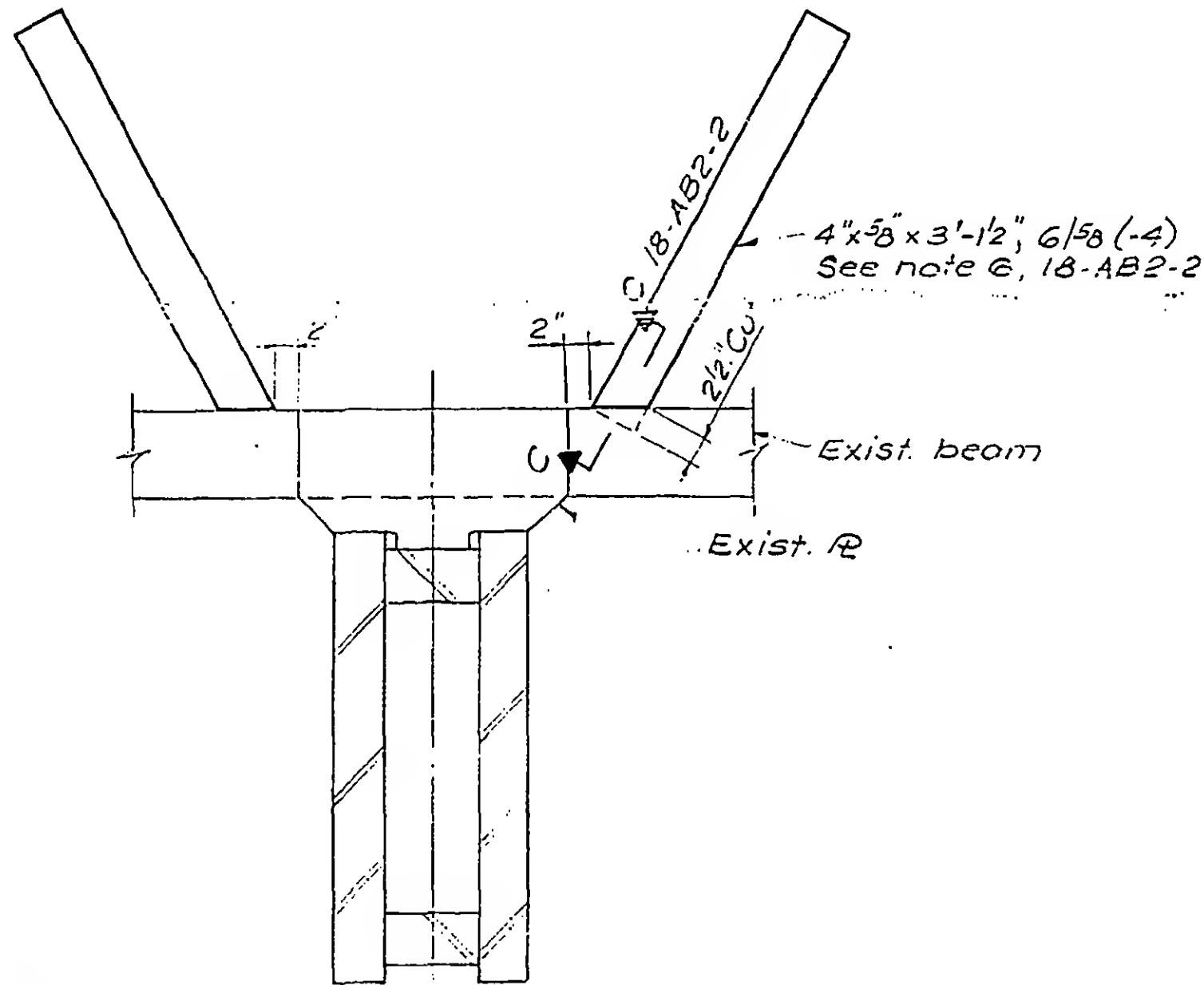
REVISIONS



DESIGNED
J. O'Neill
DRAWN
S. Wexler
REVIEWED

18-AB2-55

REVISIONS



DESIGNED
[Signature]
 DRAWN
 S. Wexler
 REVIEWED

18-AB2-56

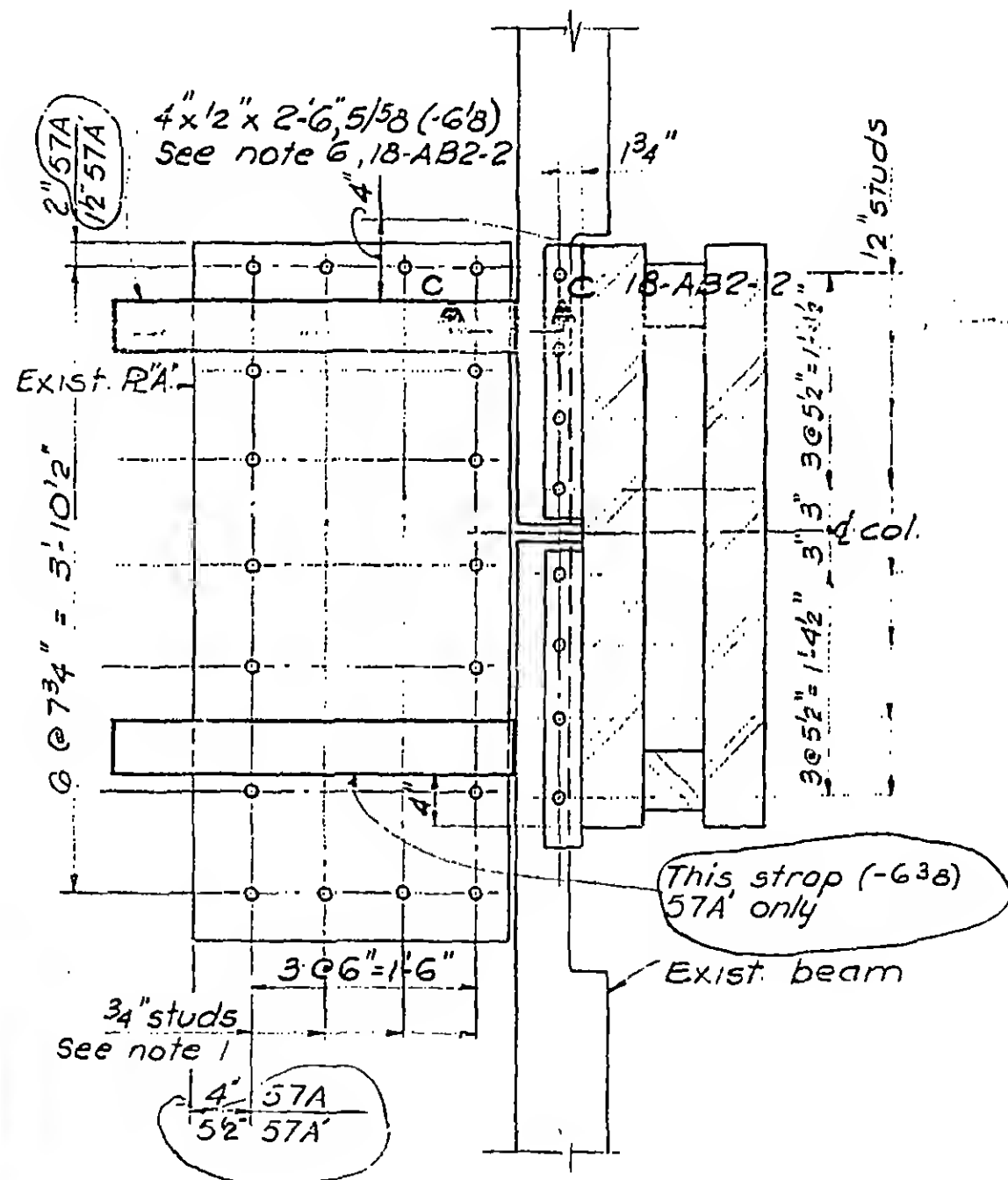
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER TITLE STRAP ANCHORS-CORE-DETAIL 57

DATE 12-13-68

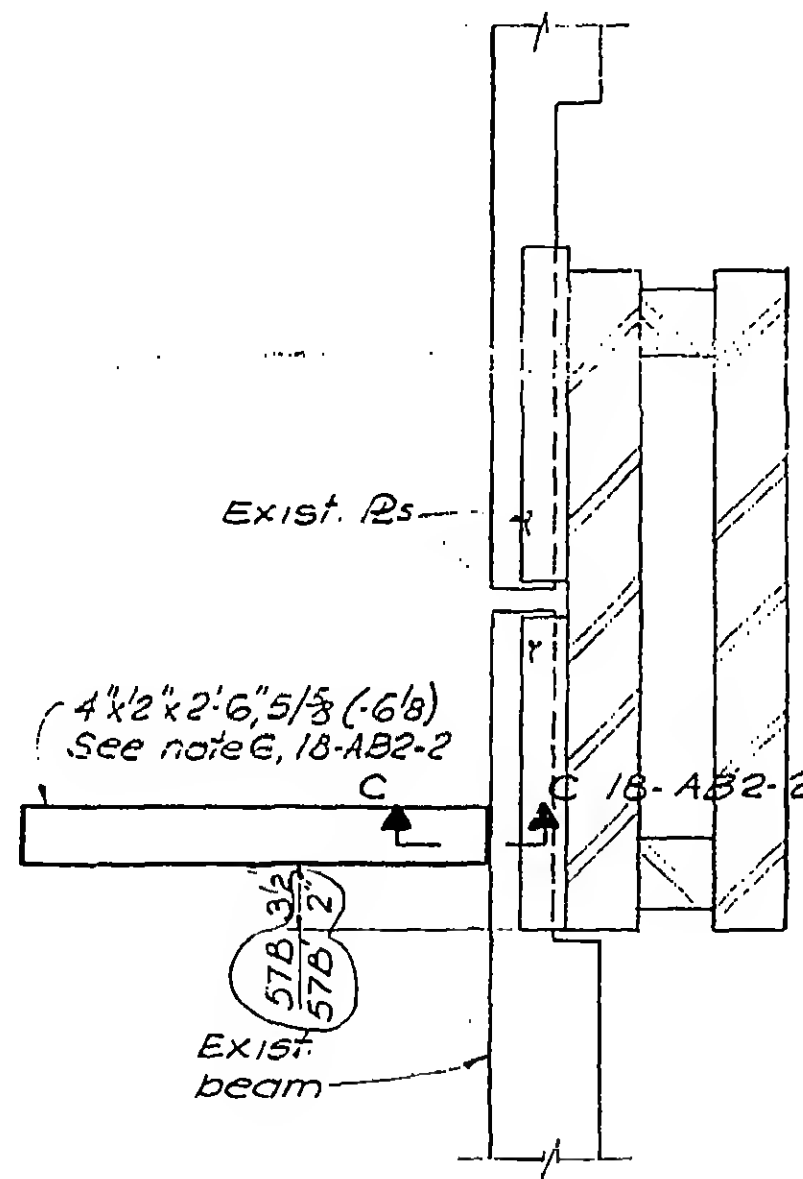
REVISIONS

10-1-69



DETAIL 57A, (57A')

Note 1 - Studs to be placed on exist. R "A" prior to installation of straps.



DETAIL 57B, (57B')

18-AB2-57.1



DESIGNED

— ८५ —

DRAWN

S. Wexler

REVIEWS

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

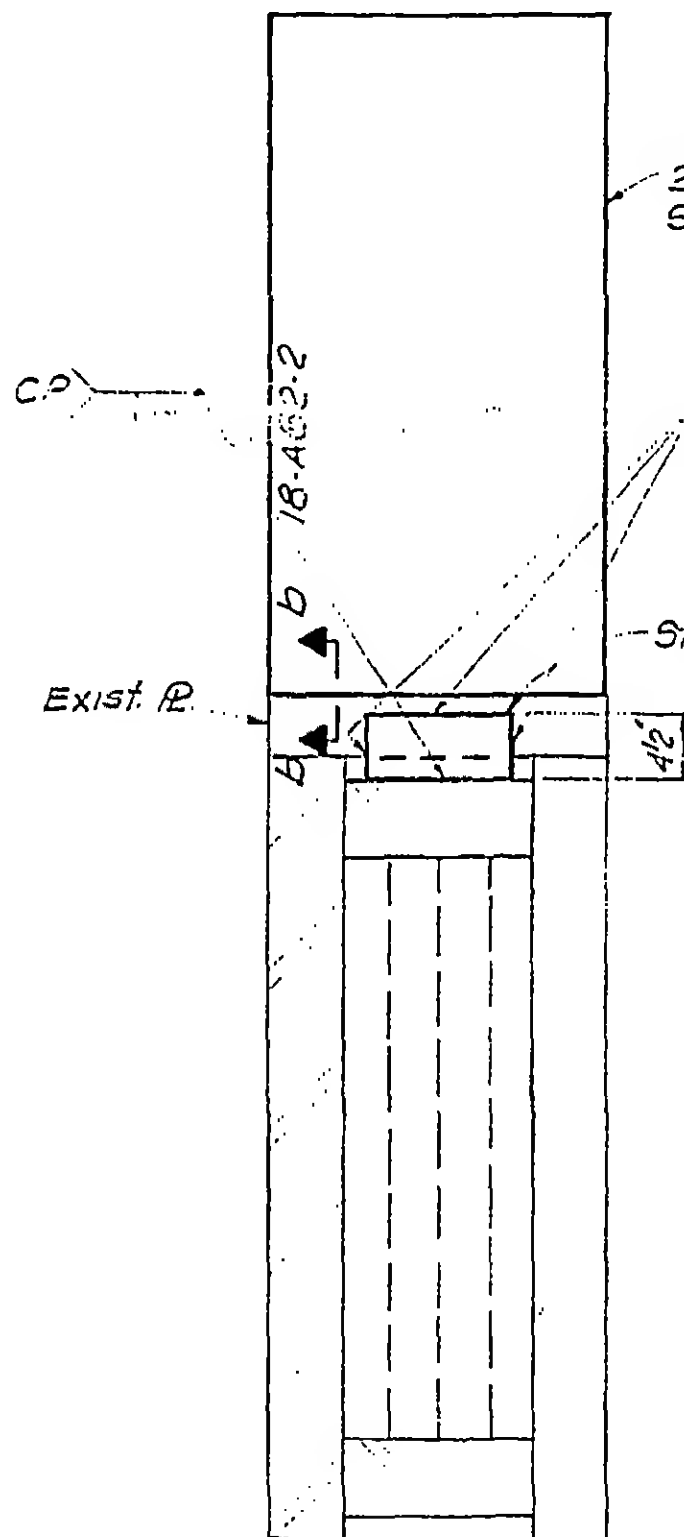
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

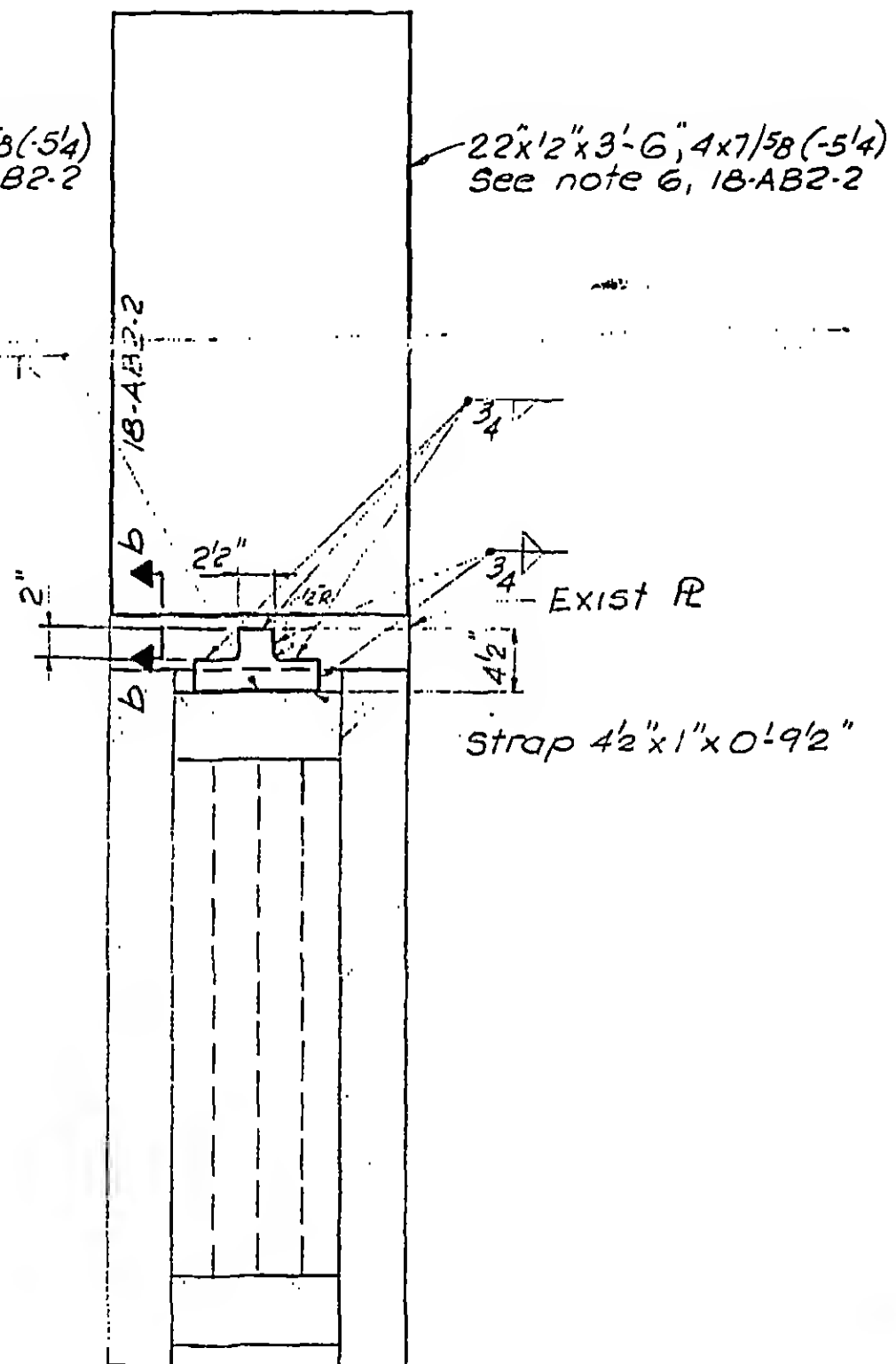
TITLE STRAP ANCHORS - CORE - DETAIL 57

DATE 12-13-68

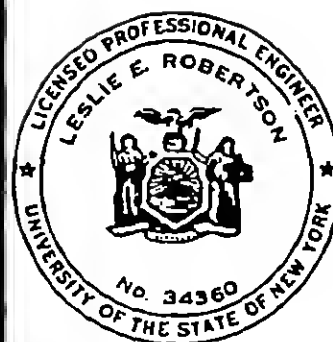
REVISIONS



DETAIL 57C



DETAIL 57D



DESIGNED
S. Wexler
DRAWN
S. Wexler
REVIEWED

18-AB2-57,2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

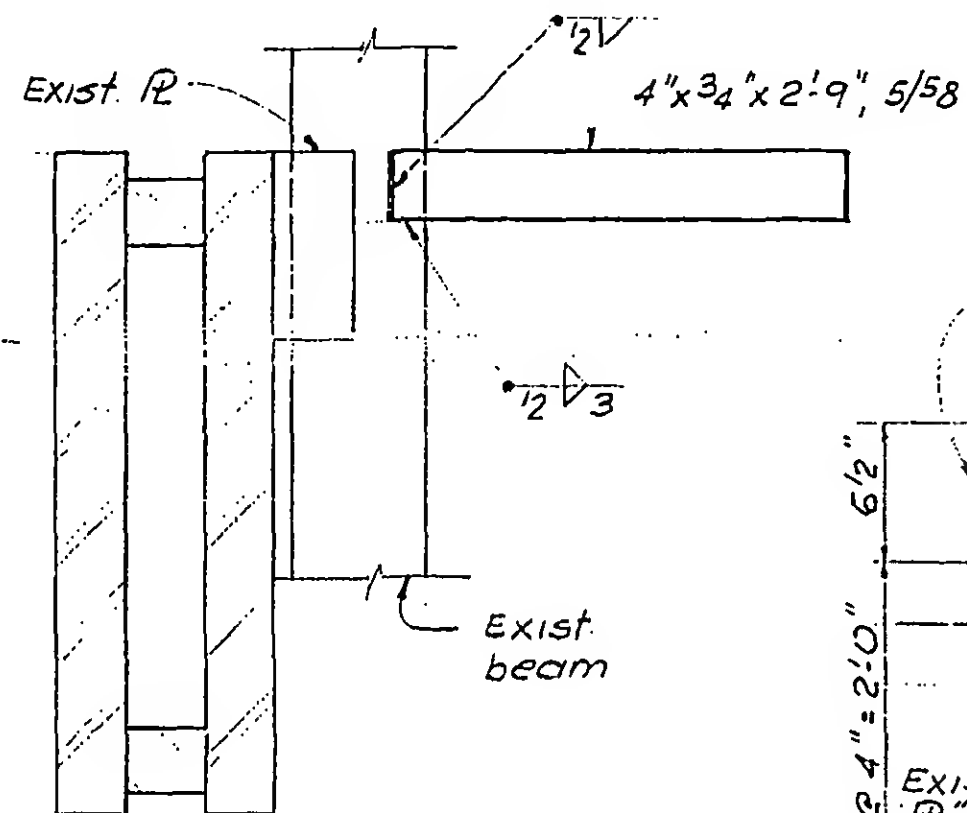
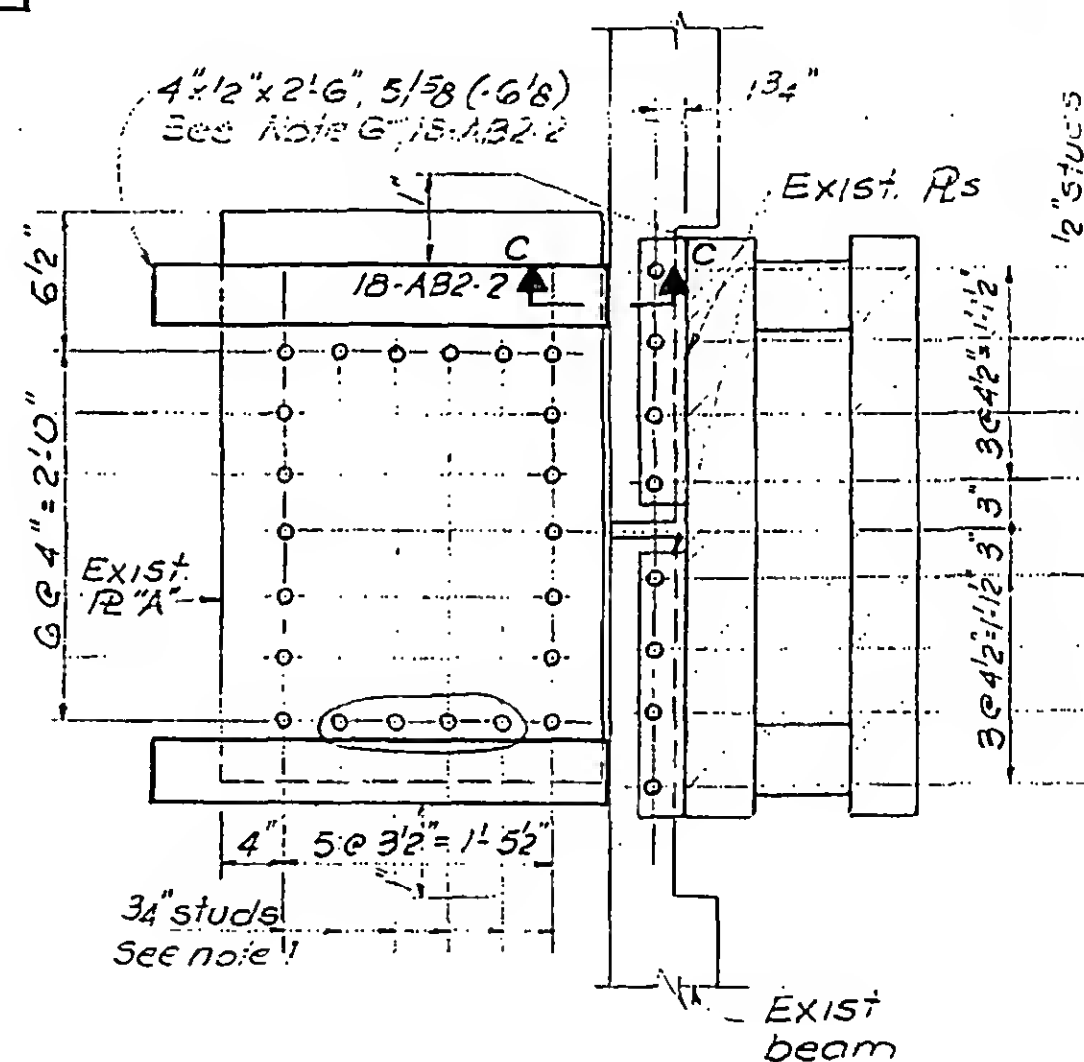
PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - CORE - DETAIL 57

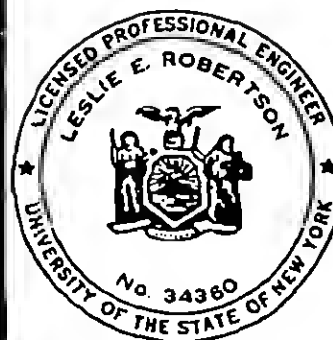
DATE 12-13-68

REVISIONS

10-1-69

DETAIL 57EDETAIL 57F

Note I - Studs to be placed on exist. R "A" prior to installation of straps.



DESIGNED
S. Wexler
DRAWN
S. Wexler
REVIEWED

18-AB2-57.3

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

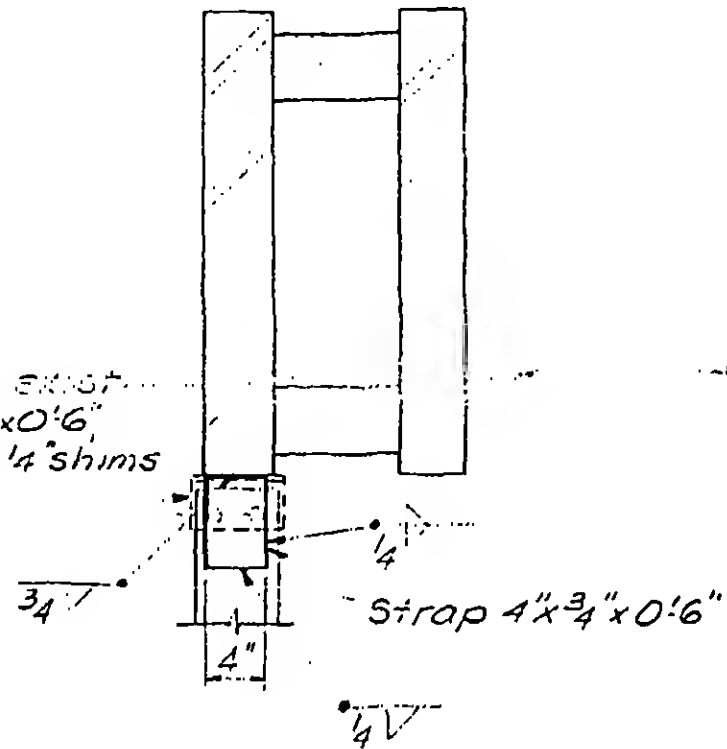
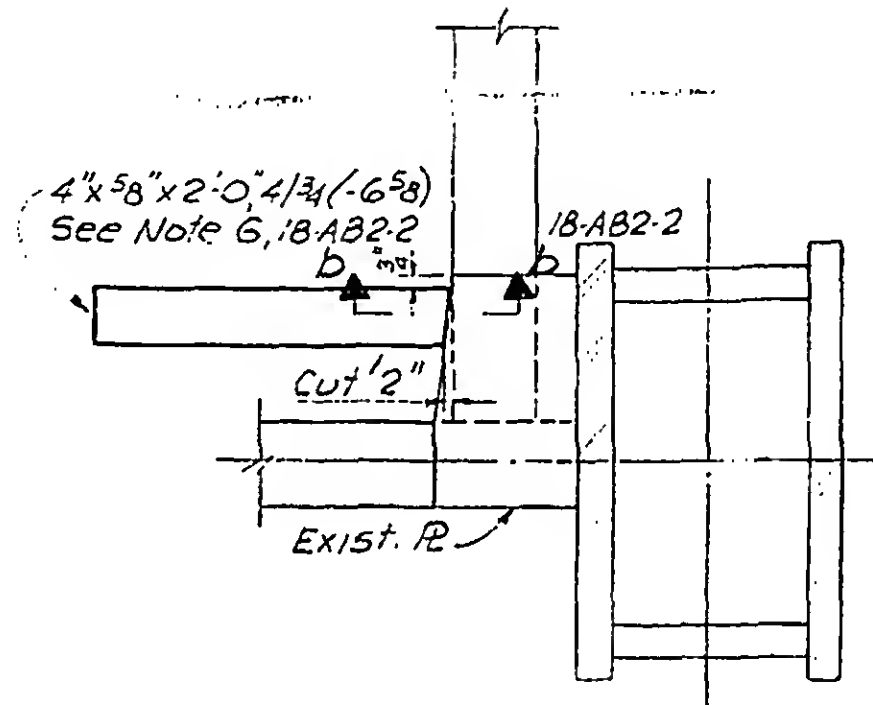
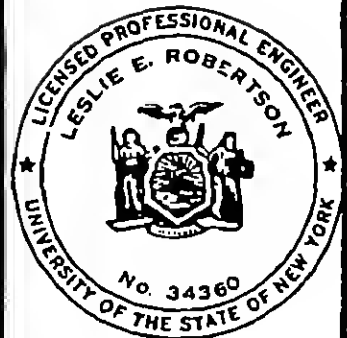
PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS-CORE - DETAIL 57

DATE 12-13-68

REVISIONS

Remove EXIST.
L 4x4x0'6"x0'6"
3/4" bolts, 1/4" shims
4 welds

DETAIL 57GDETAIL 57H

DESIGNED

J. O'Hara

DRAWN

S. Wexler

REVIEWED

18-AB2-57.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

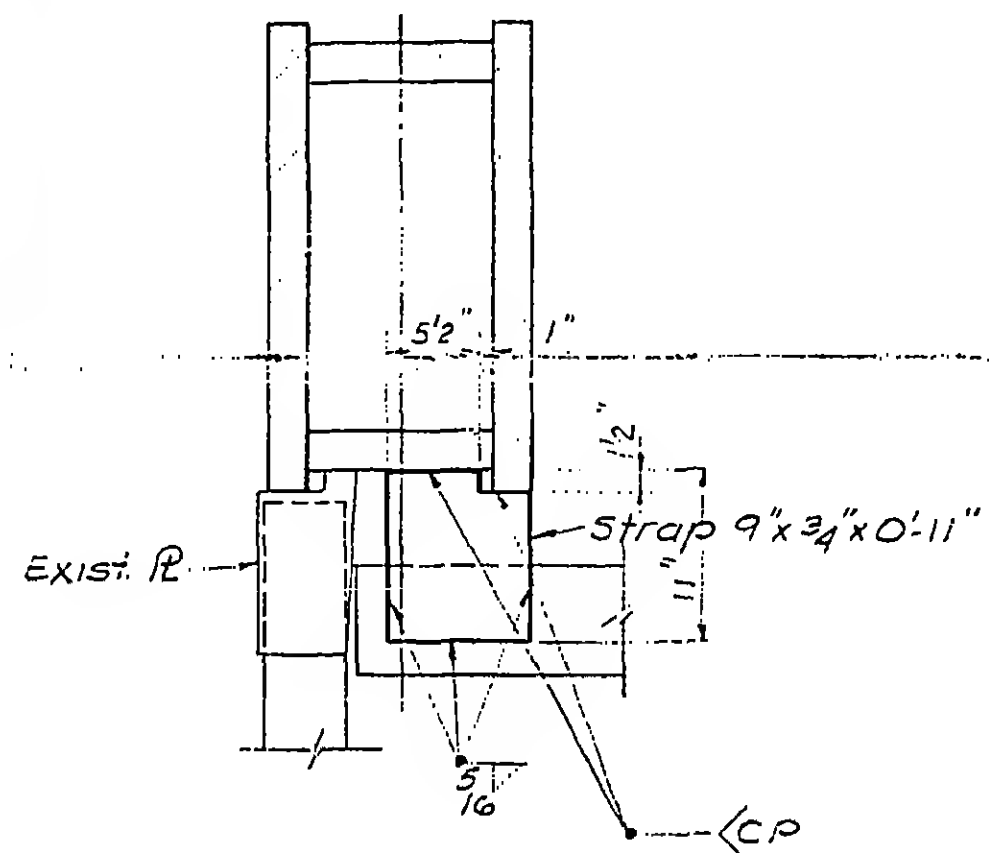
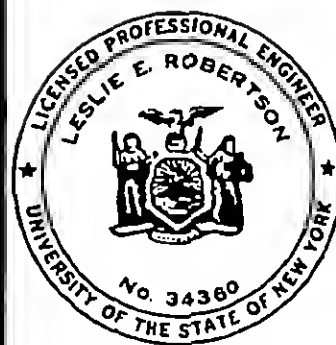
TITLE

STRAP ANCHORS - CORE - DETAIL 58

DATE

12-13-68

REVISIONS

DETAIL 58ADESIGNED
J. O'NeillDRAWN
S. Wexler

REVIEWED

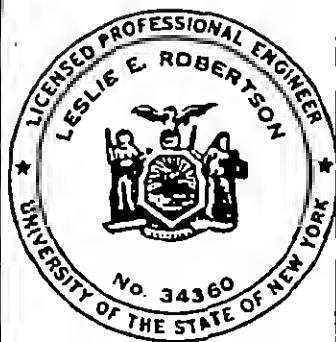
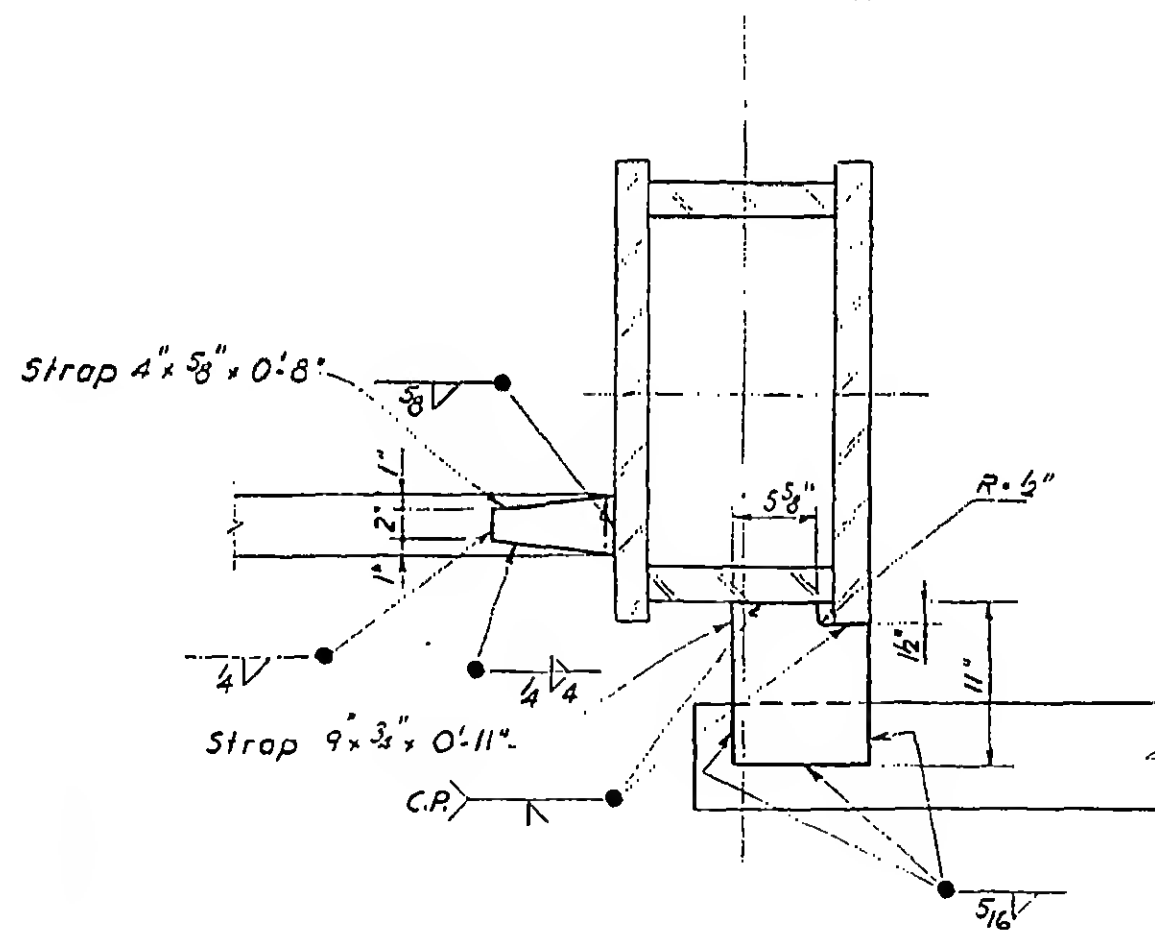
18-AB2-58

Structural & Civil Engineers

TITLE STRAP ANCHORS - CORE - DETAIL 59

| | |
|------|--------|
| DATE | 2-7-69 |
|------|--------|

REVISIONS



DESIGNEO

DESIGNED
 2/10/20

DRAWN

F. Smith

REVIEWS

REVIEWED
W. Brewer

18-AB2-59

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

STRAP ANCHOR - CORE - DETAIL 60

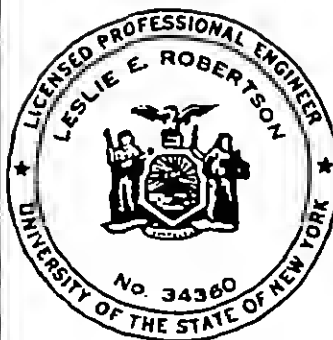
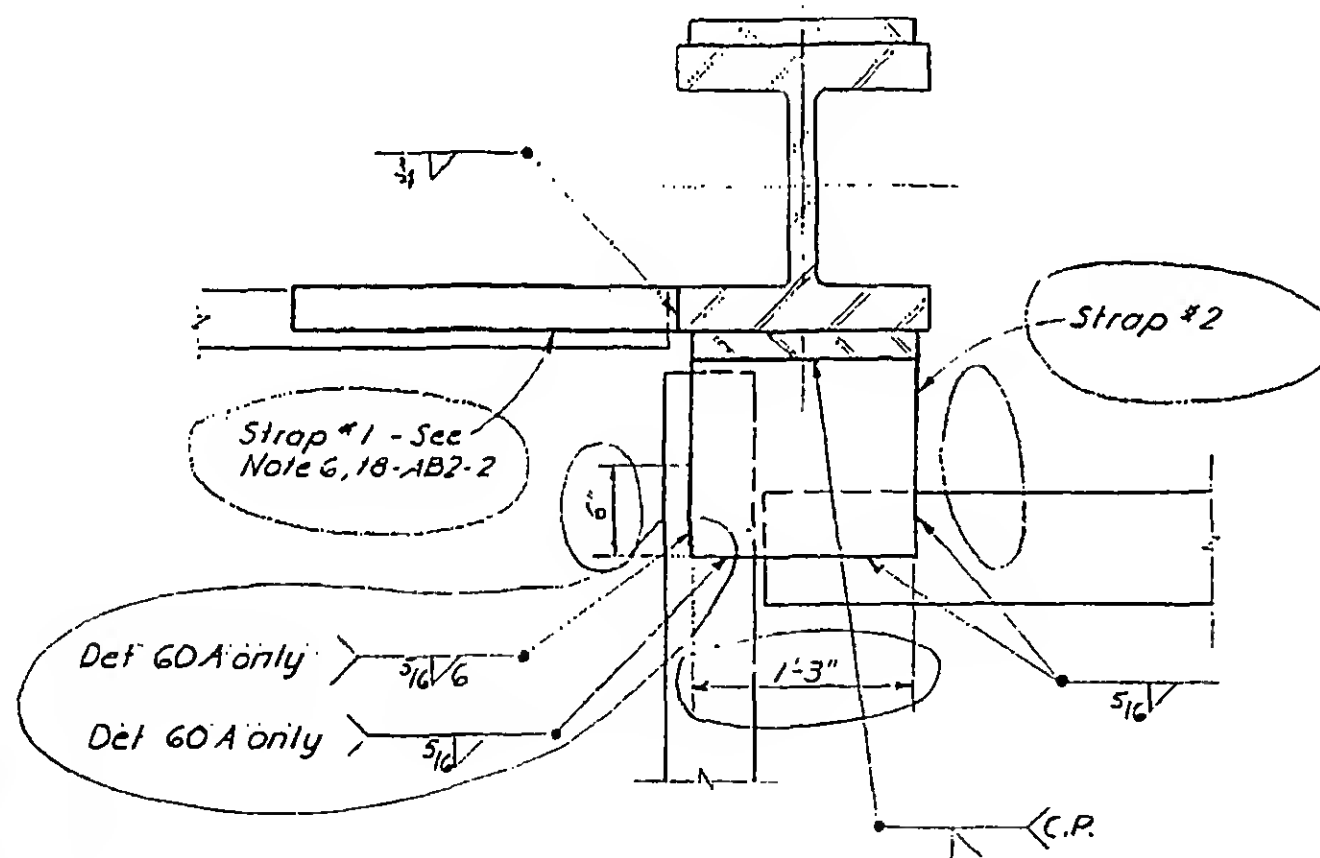
DATE

2-7-69

REVISIONS

4-30-69

| Detail NO | Strap #1 - Studs | Strap #2 |
|--------------|-----------------------|--------------------------|
| 60 | 3" x 3/4" x 2'-1 1/2" | 4/5/8 13" x 3/4" x 1'-3" |
| 60A | 3" x 3/8" x 1'-7 1/2" | 3/5/8 15" x 3/4" x 1'-4" |



66

DESIGNED

F. Smith

DRAWN

F. Smith

REVIEWED

W. Brewer

18-AB2-60

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

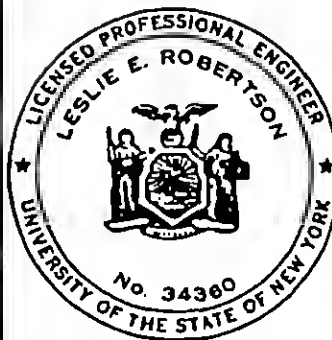
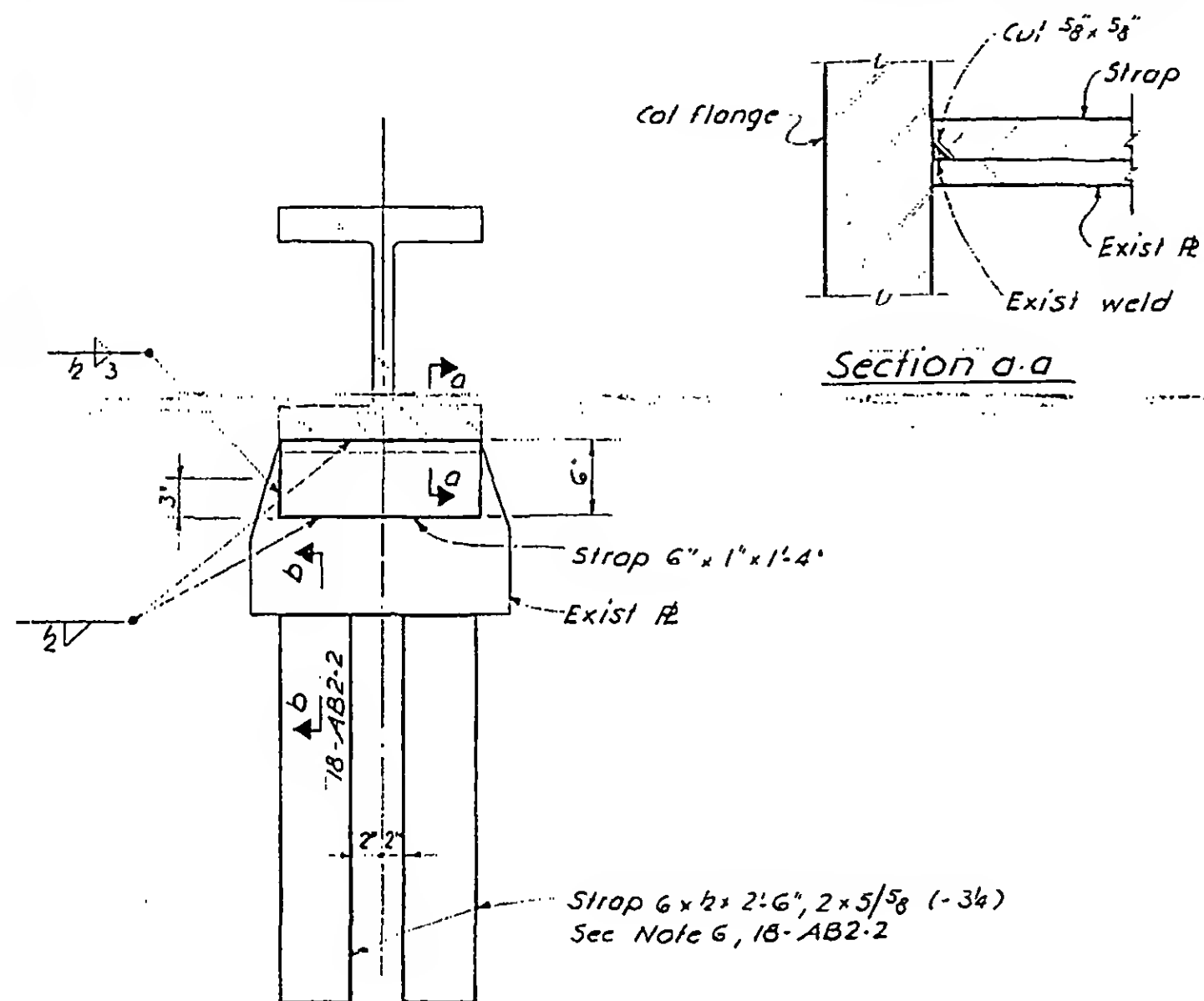
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHOR - CORE - DETAIL 61

DATE 4/30/69

REVISIONS



67

DESIGNED

DRAWN

F. Smith

REVIEWED

W. Brewer

18-AB2-61

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

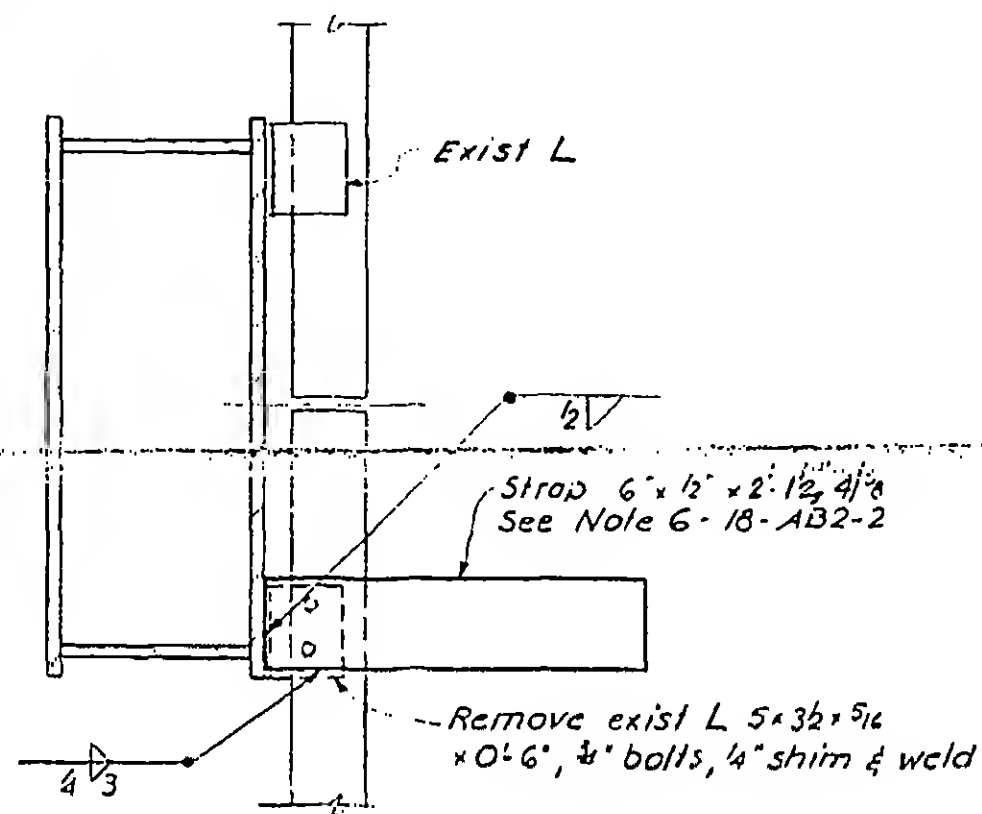
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

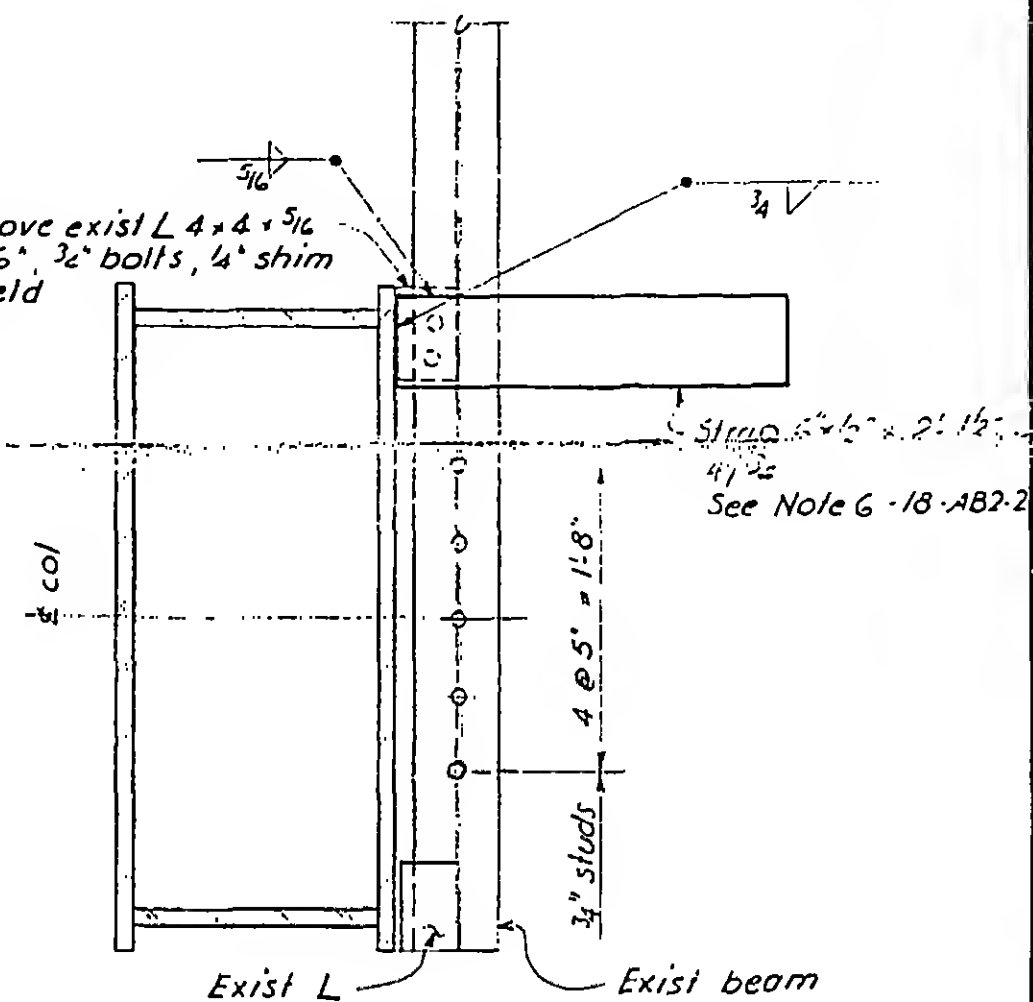
TITLE STRAP ANCHORS - CORE - DETAIL 62

DATE 4/30/69

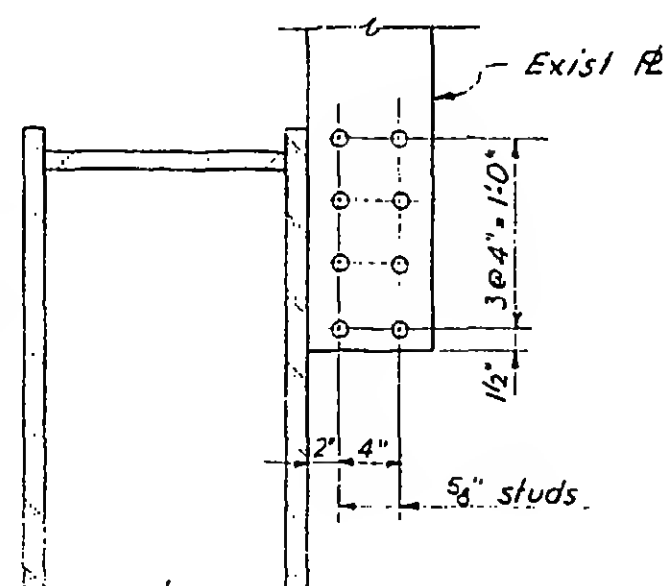
REVISIONS



DETAIL 62A



DETAIL 62C



DETAIL 62B



68

DRAWN
F. SmithREVIEWED
W. Brewer

18-AB2-62.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

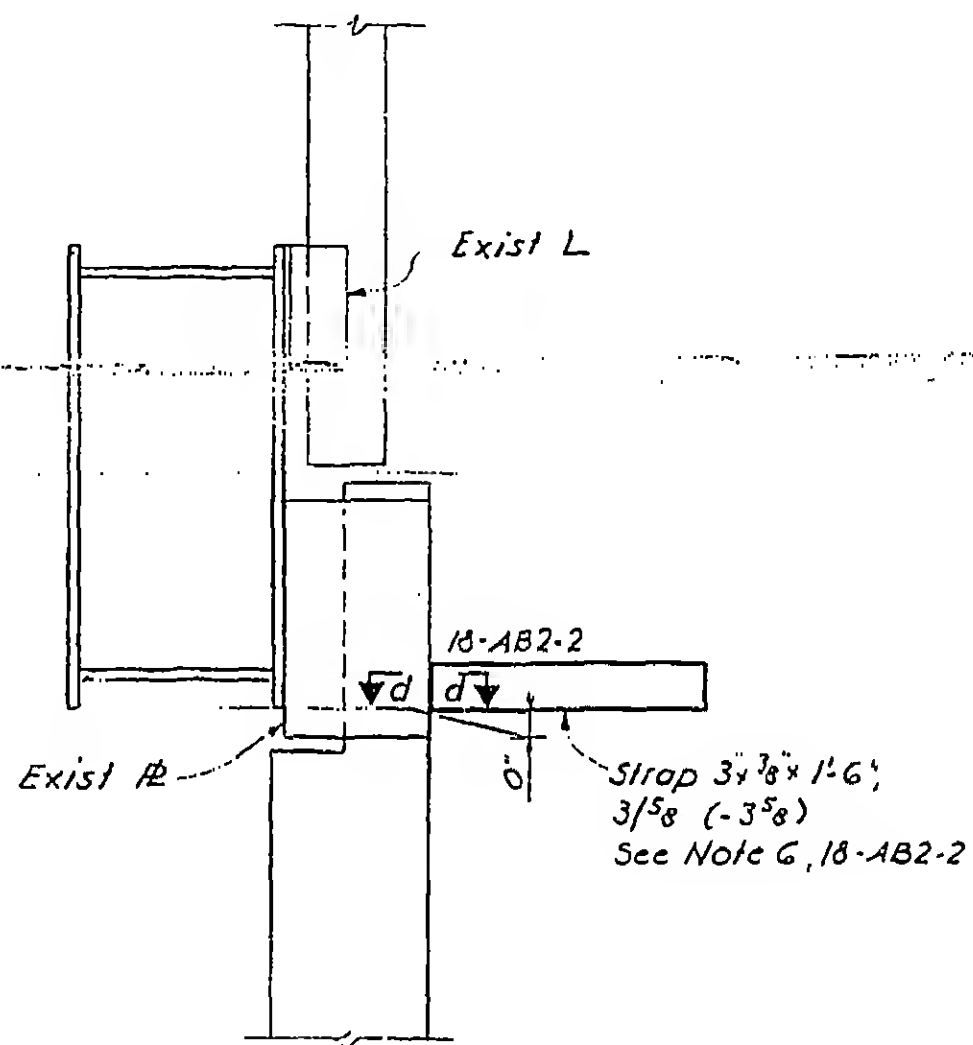
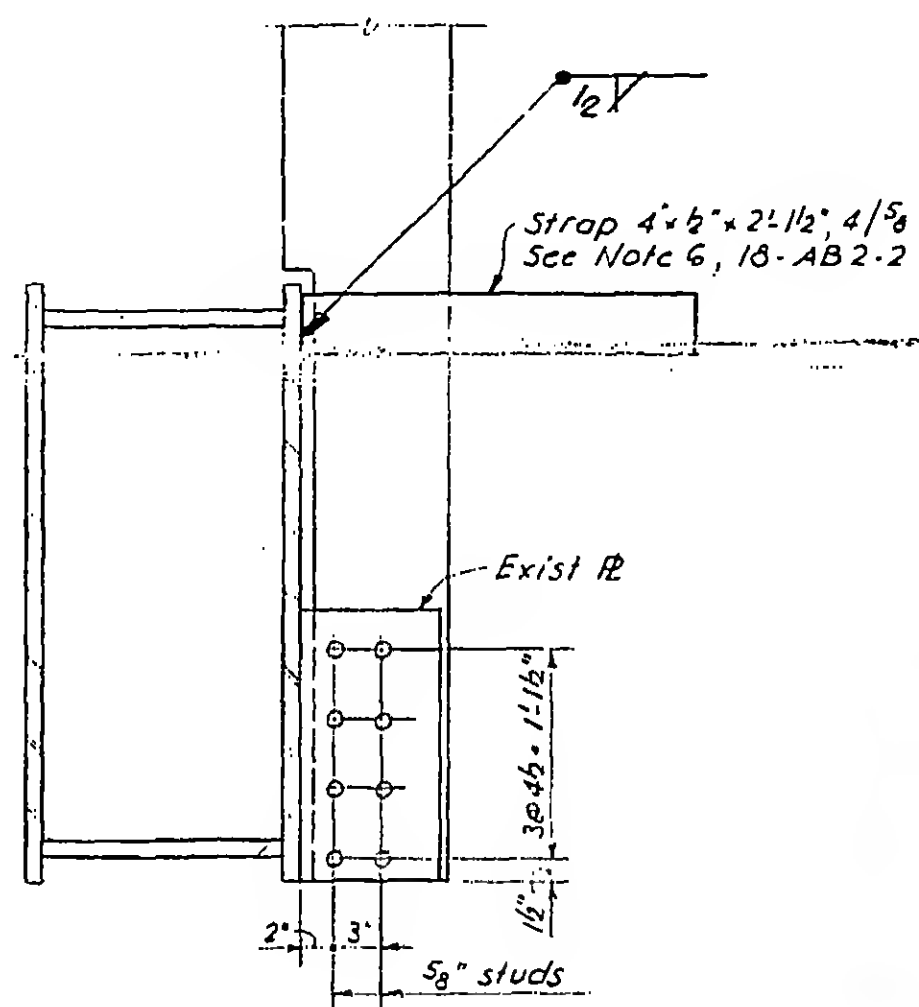
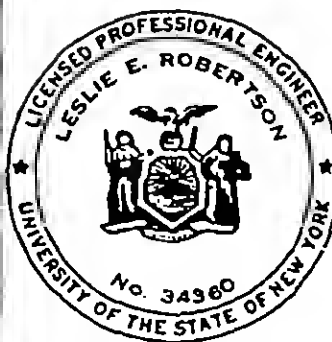
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - DETAIL 62

DATE 4/30/69

REVISIONS

DETAIL 62DDETAIL 62E

69

DESIGNED

DRAWN

F. Smith

REVIEWED

W. Brewer

18-AB2-62.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

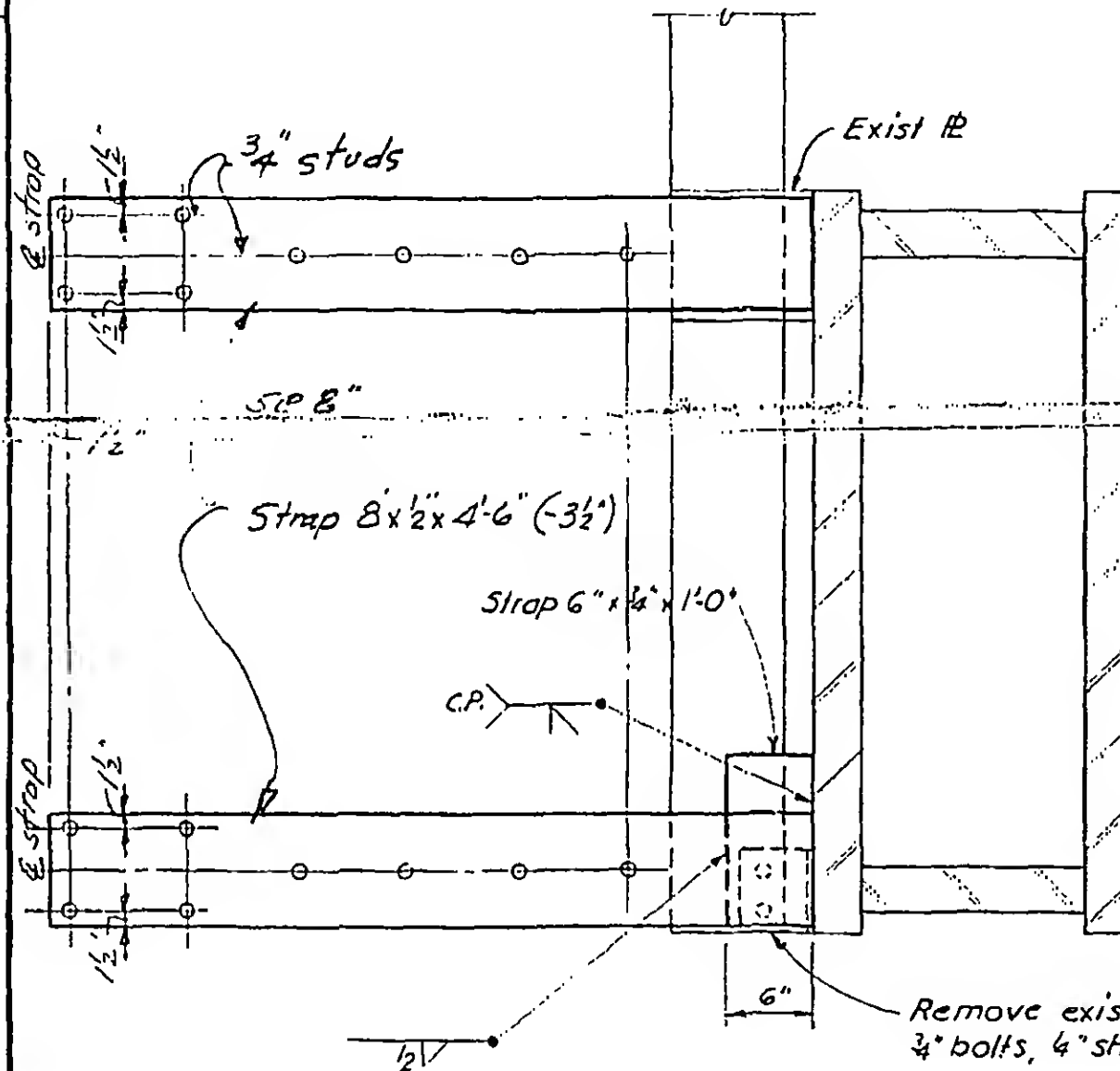
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

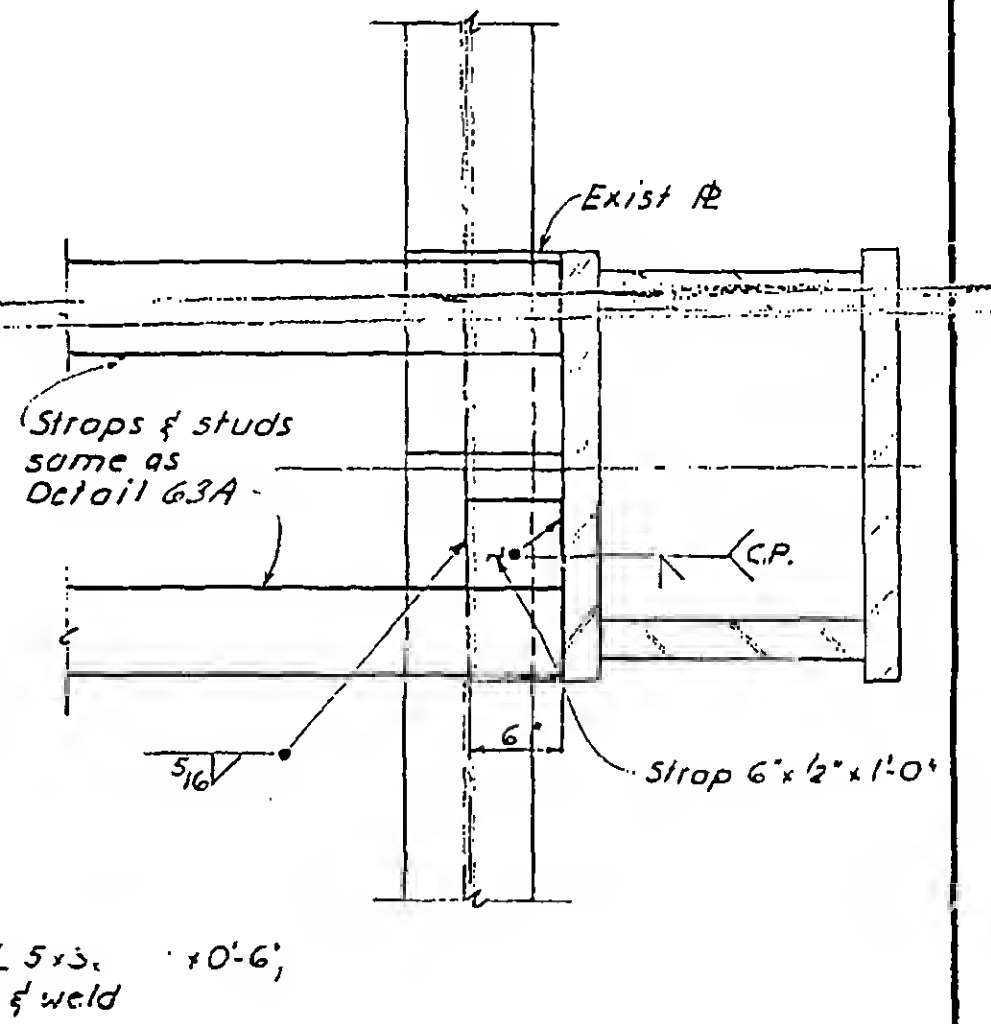
TITLE STRAP ANCHOR - CORE - DETAIL 63

DATE 4/30/69

REVISIONS



DETAIL 63A



DETAIL 63B



70

DESIGNED

DRAWN

F. Smith

REVIEWED

W. Brewer

18-AB2-63

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

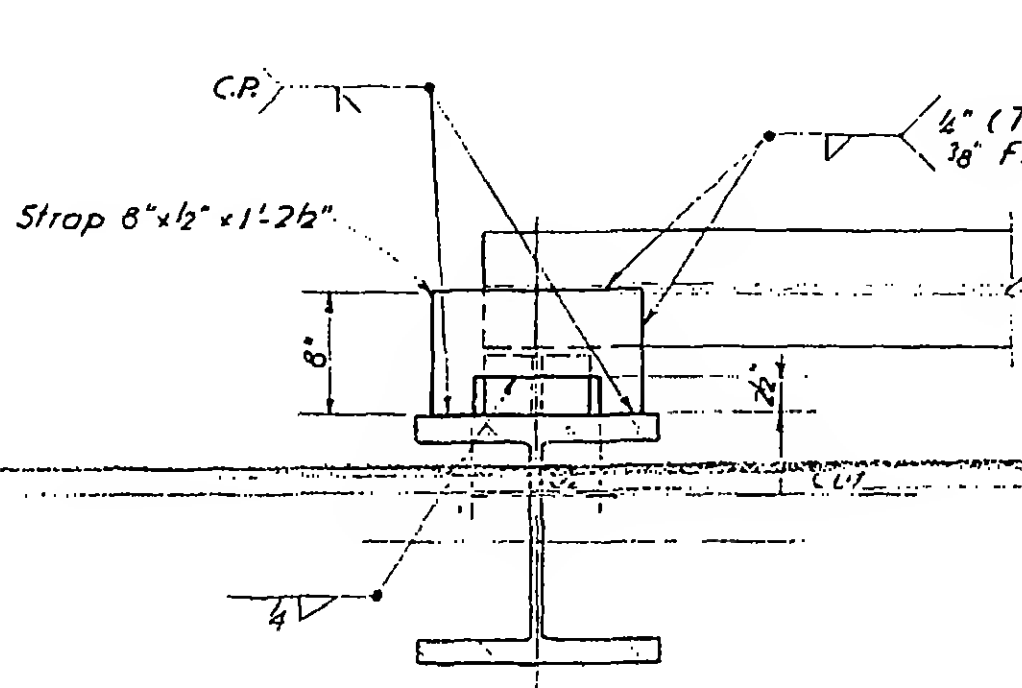
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

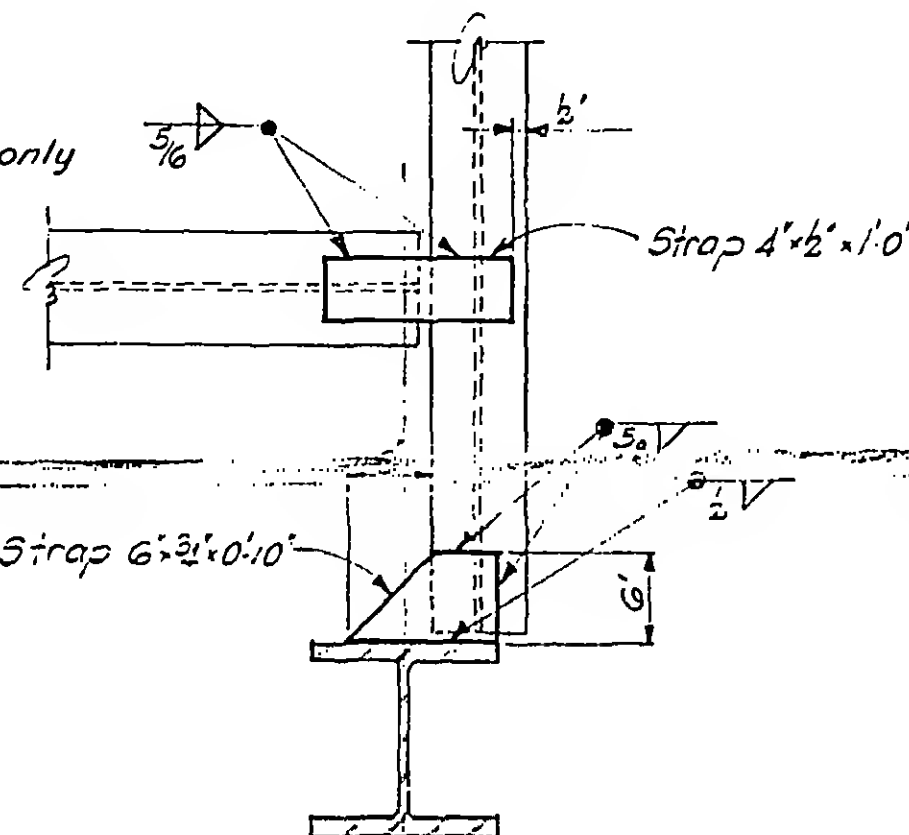
TITLE STRAP ANCHOR - CORE - DETAIL 64

DATE 4/30/69

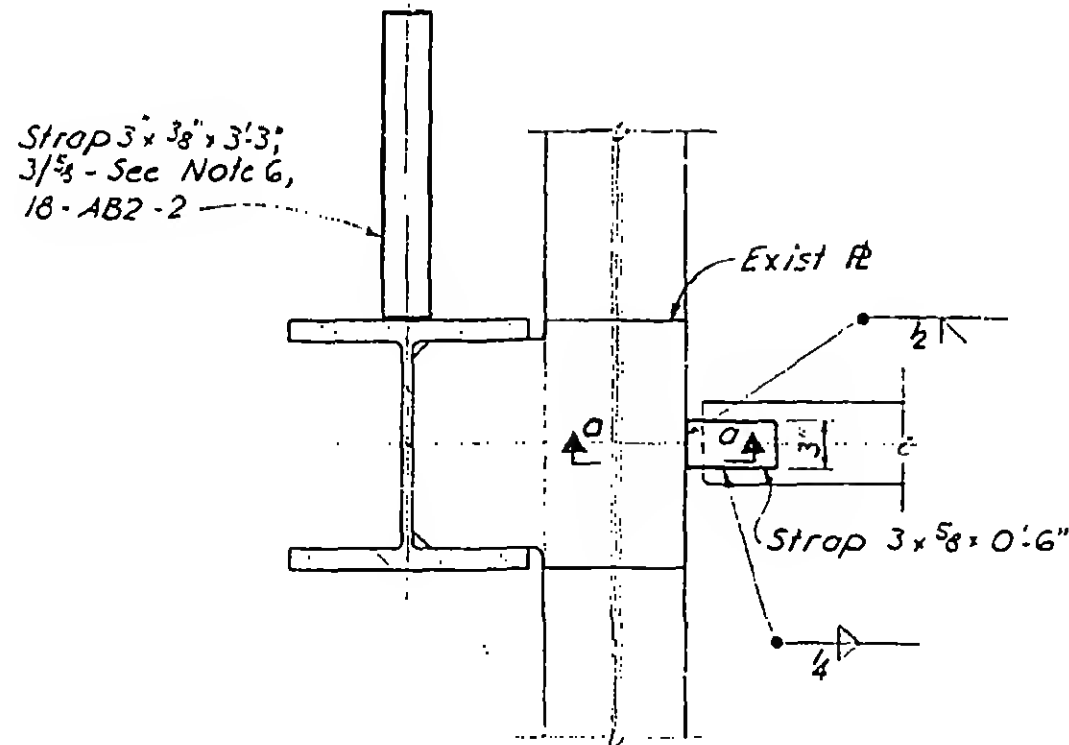
REVISIONS



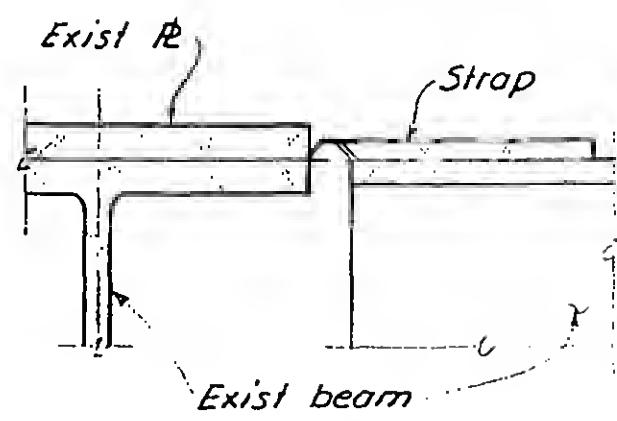
DETAIL 64A



DETAIL 64C



DETAIL 64B



Section a-a



71
DESIGNED
DRAWN
F. Smith
REVIEWED
W. Brewer

18-AB2-64.1

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

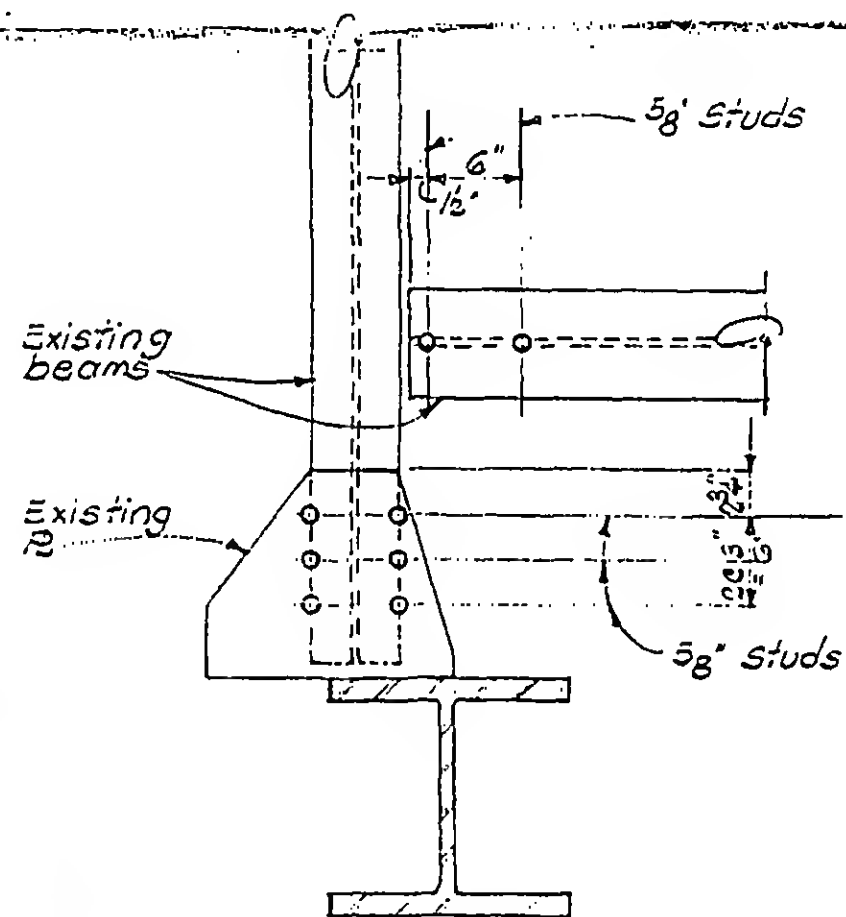
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

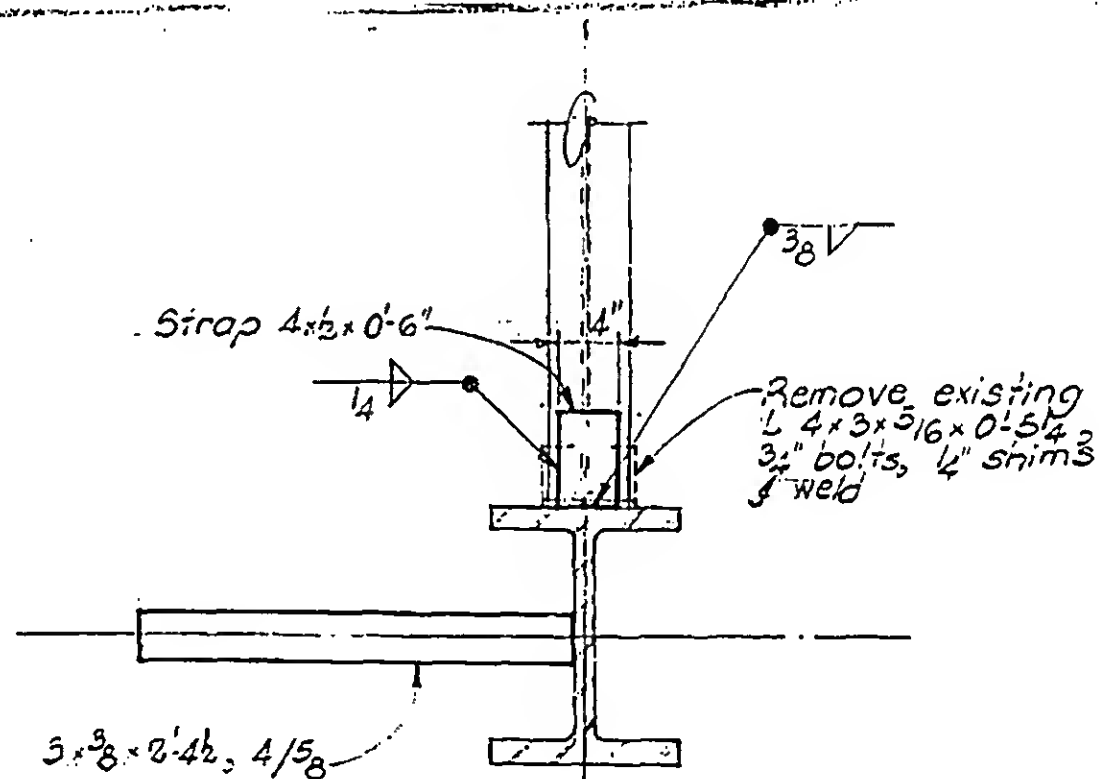
TITLE STRAP ANCHOR CORE DETAIL 64

DATE 4/30/69

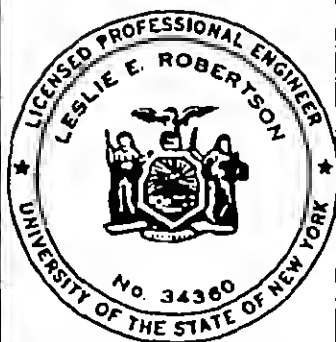
REVISIONS



SECTION 64D



SECTION 64E



DESIGNED
DRAWN
S.T.M.
REVIEWED
W. Brewer

18-AB2-64.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

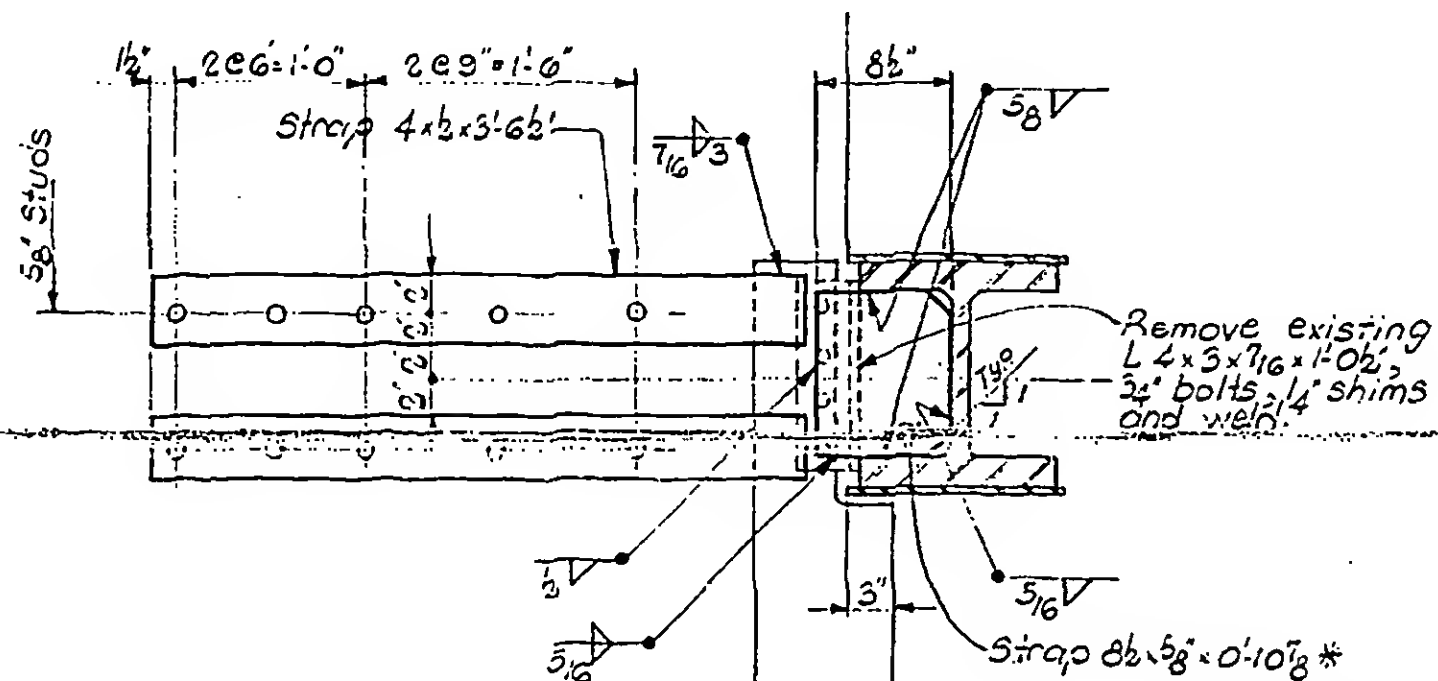
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHOR CORE DETAIL 65

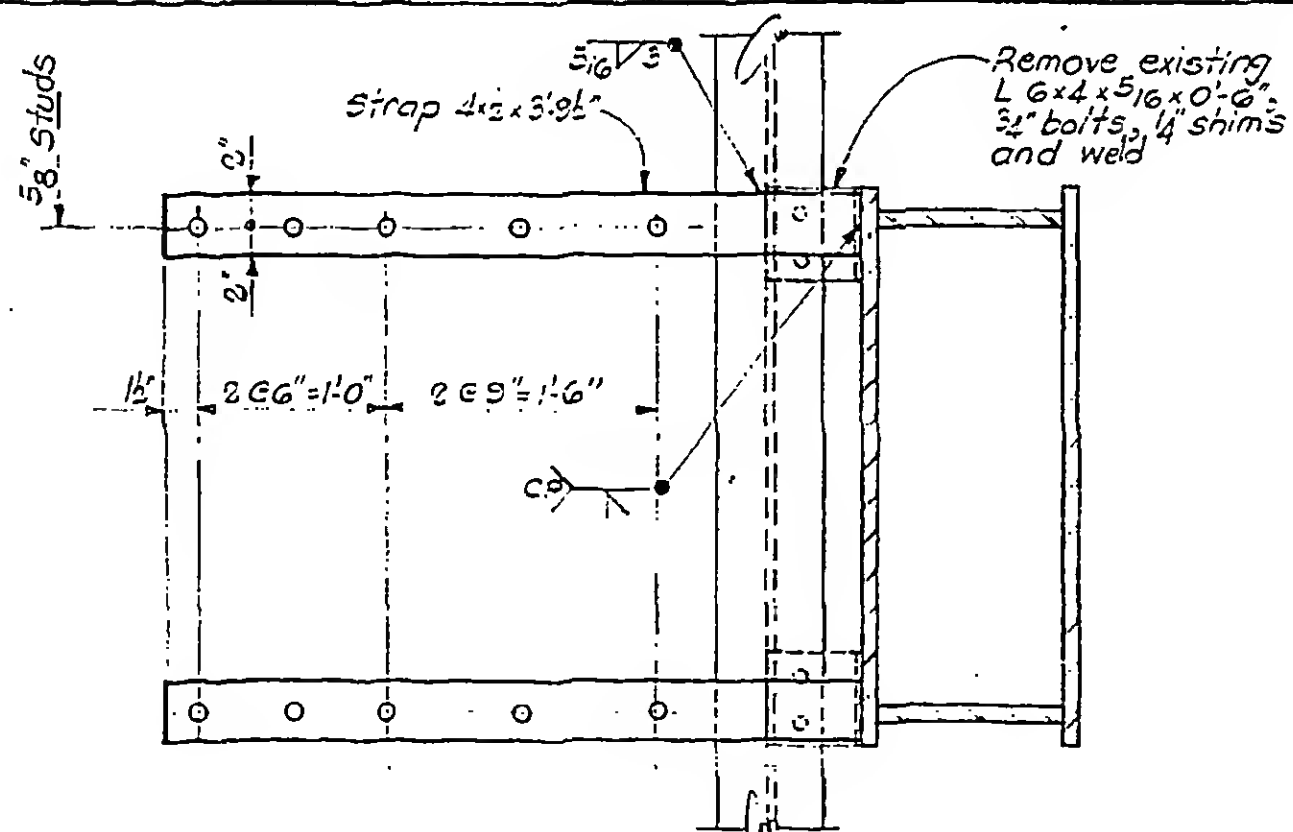
DATE 4-30-69

REVISIONS



DETAIL 65A

* This is the theoretical dimension.
Cut in the field from 8 1/2 x 5 1/8 x 1'-0"
Maximum gap permitted between
strap and column flange is 5/16"



DETAIL 65B



73

DESIGNED

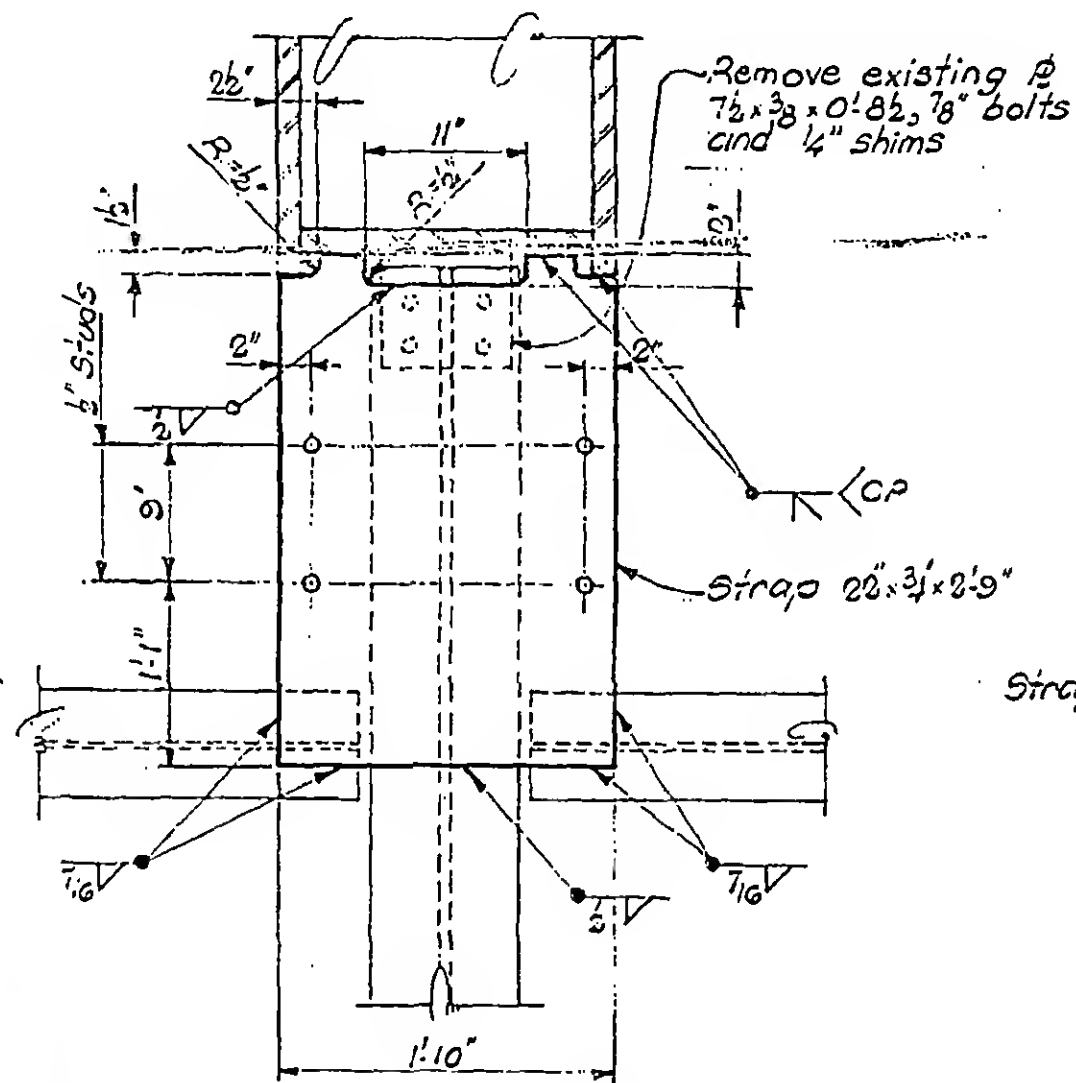
DRAWN
S.T.M.

REVIEWED

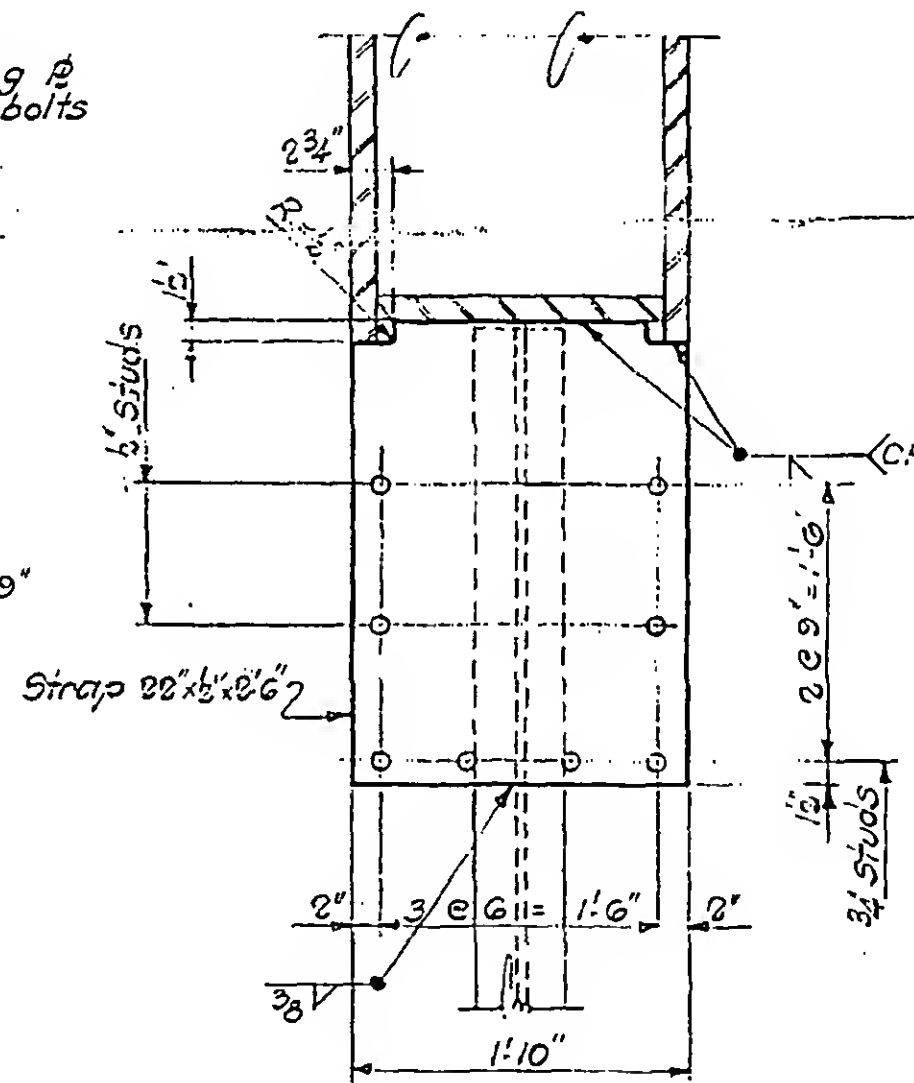
W. Brewer

18-A32-65

REVISIONS



DETAIL 66A



DETAIL 66B



DESIGNED

DRAWN
S.T.M.

REVIEWED
W Brewer

18-432-66.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

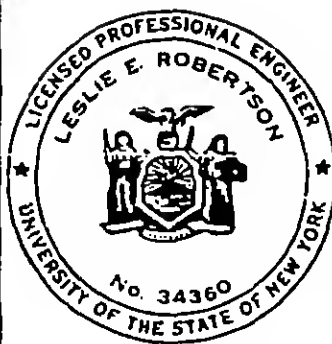
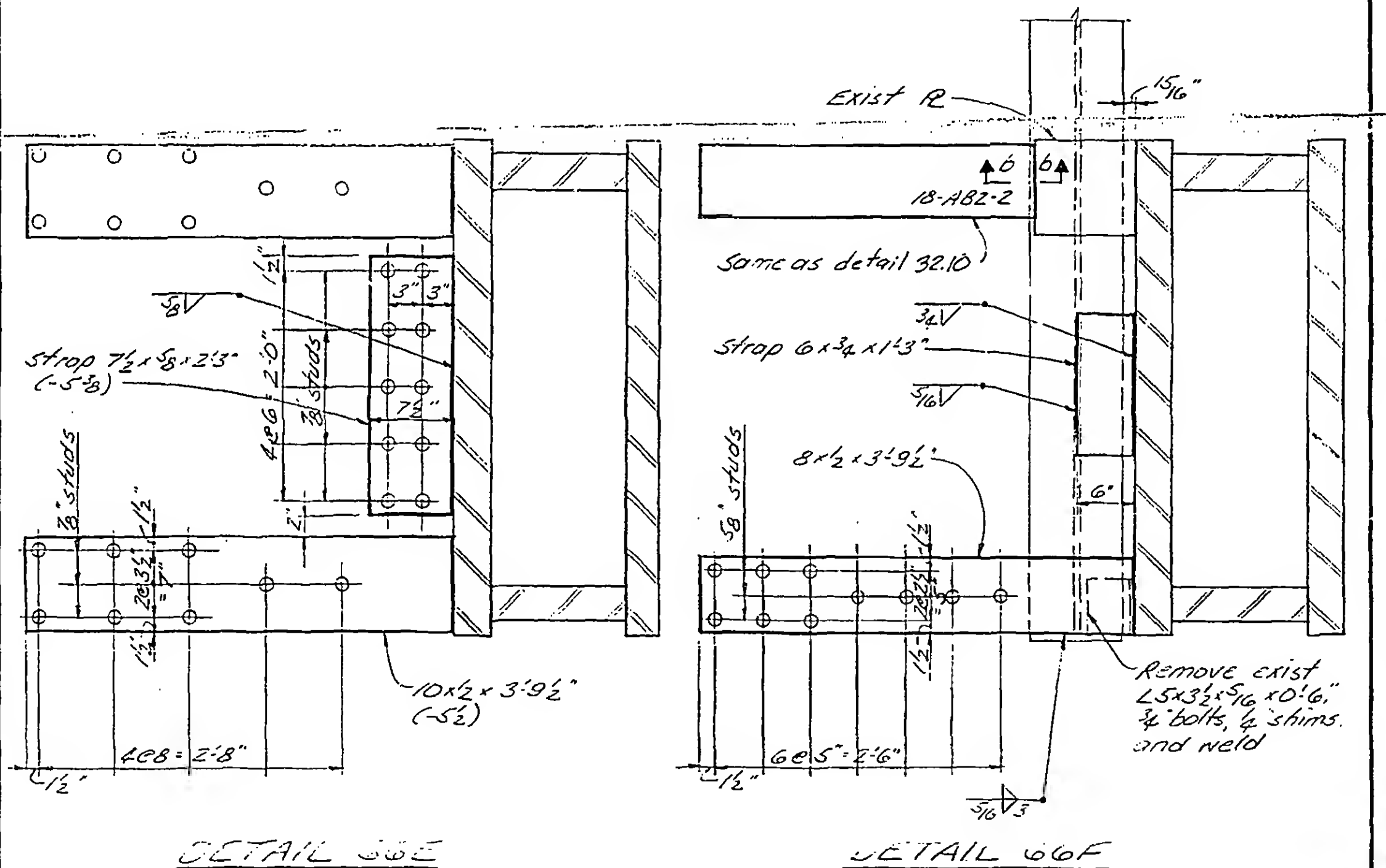
Structural & Civil Engineers

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TITLE STRAP ANCHOR - CORE - DETAIL 66

DATE 4/30/69

REVISIONS



DESIGNED

DRAWN

J. Adams

REVIEWED

W. Brewer

18-AB2-66.3

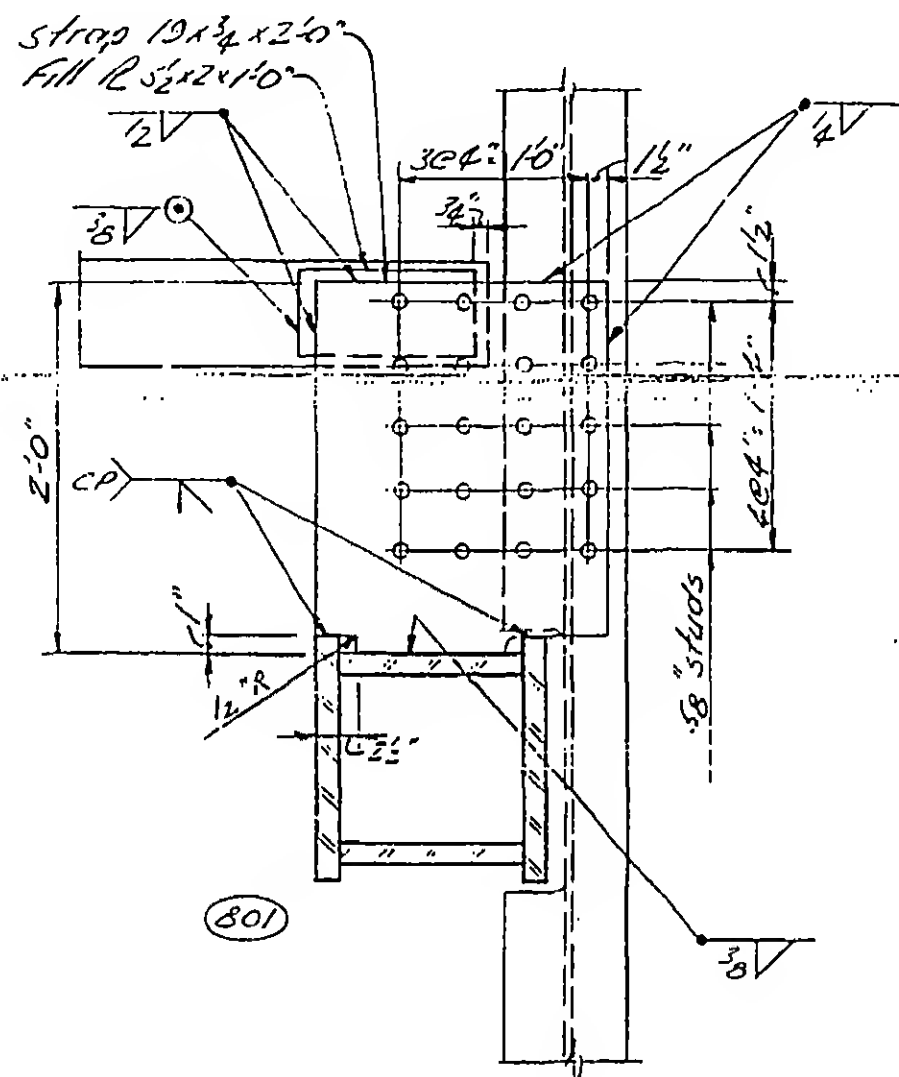
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

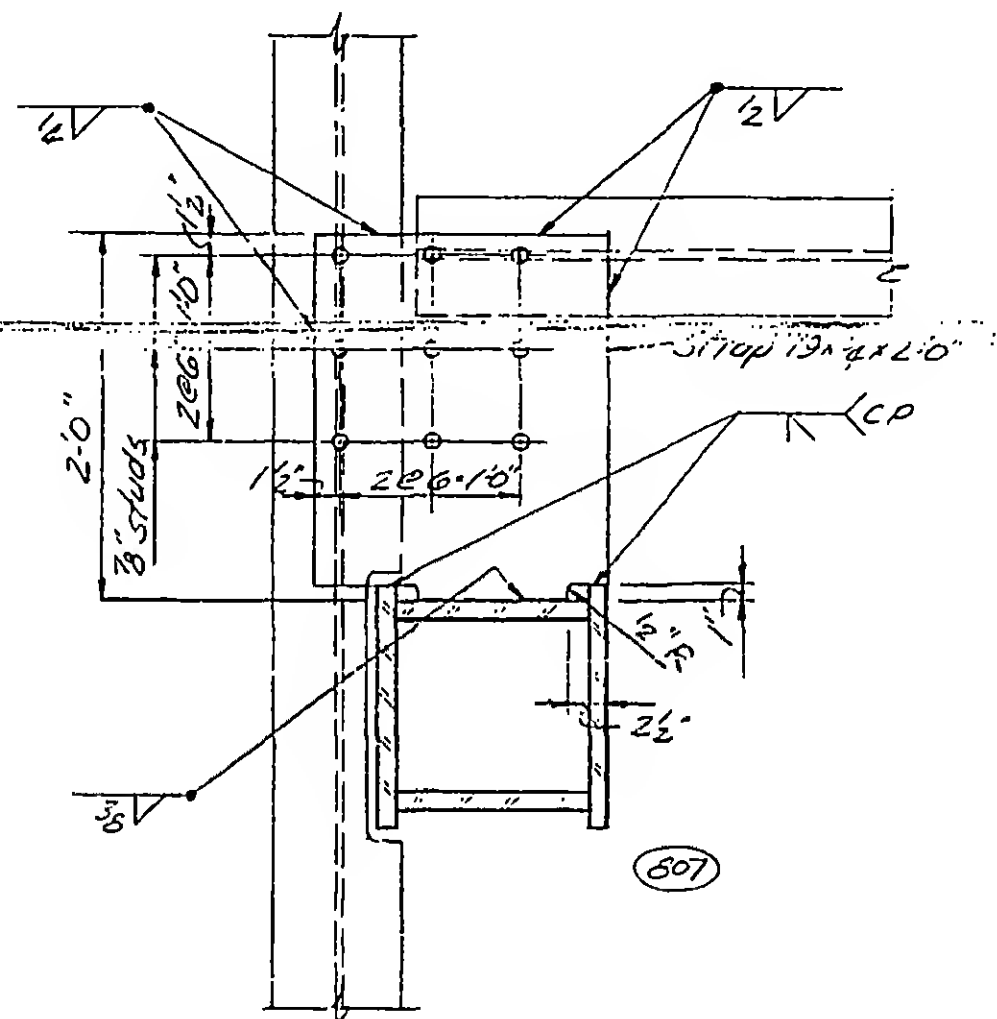
TITLE STRAP ANCHORS - CORE - DETAIL 67

DATE 4/30/69

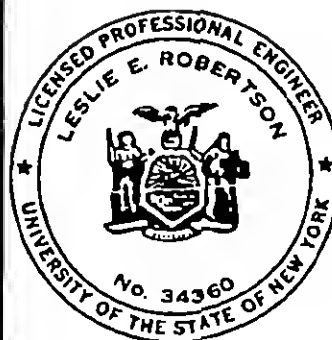
REVISIONS



DETAIL 67A



DETAIL 67B



DRAWN
J. Adams

REVIEWED
W. Brewer

18-ABZ-67.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

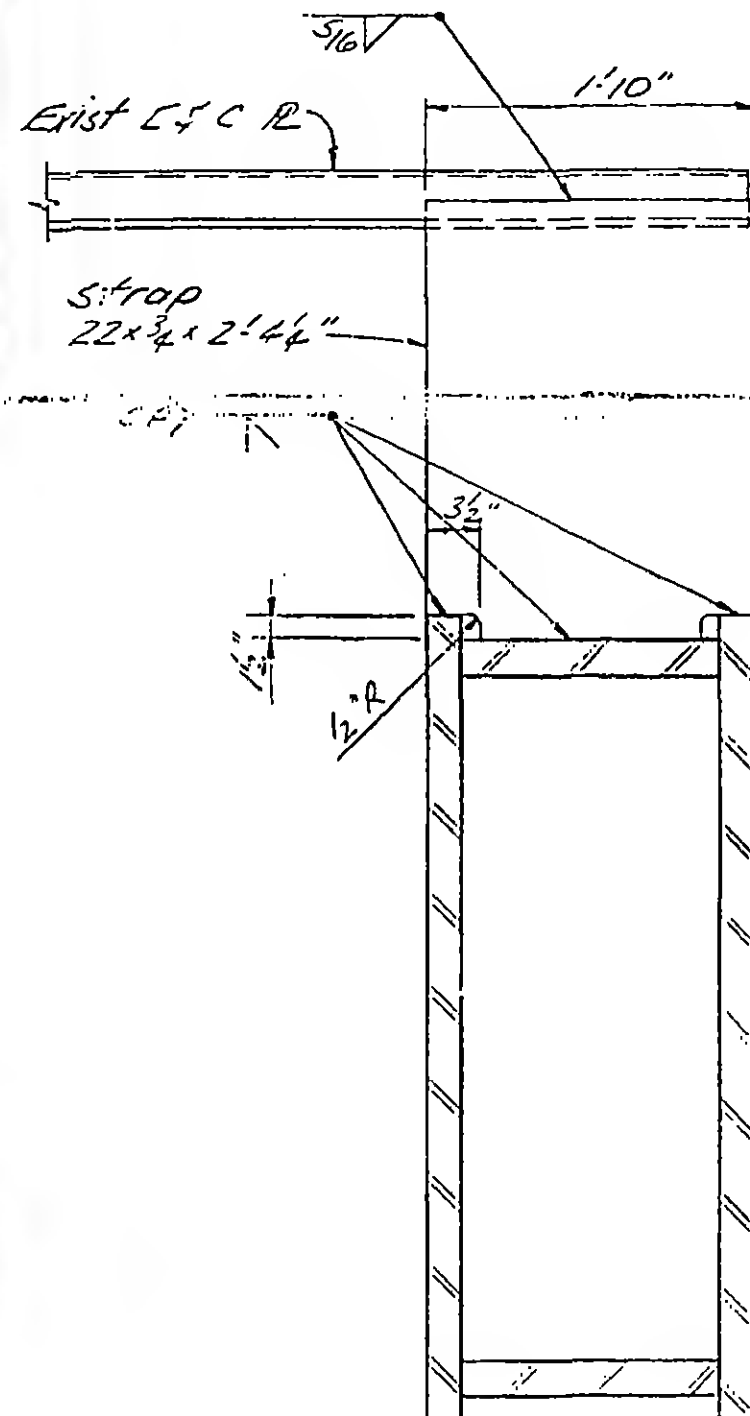
TITLE

STRAP ANCHOR - CORE - DETAIL 67

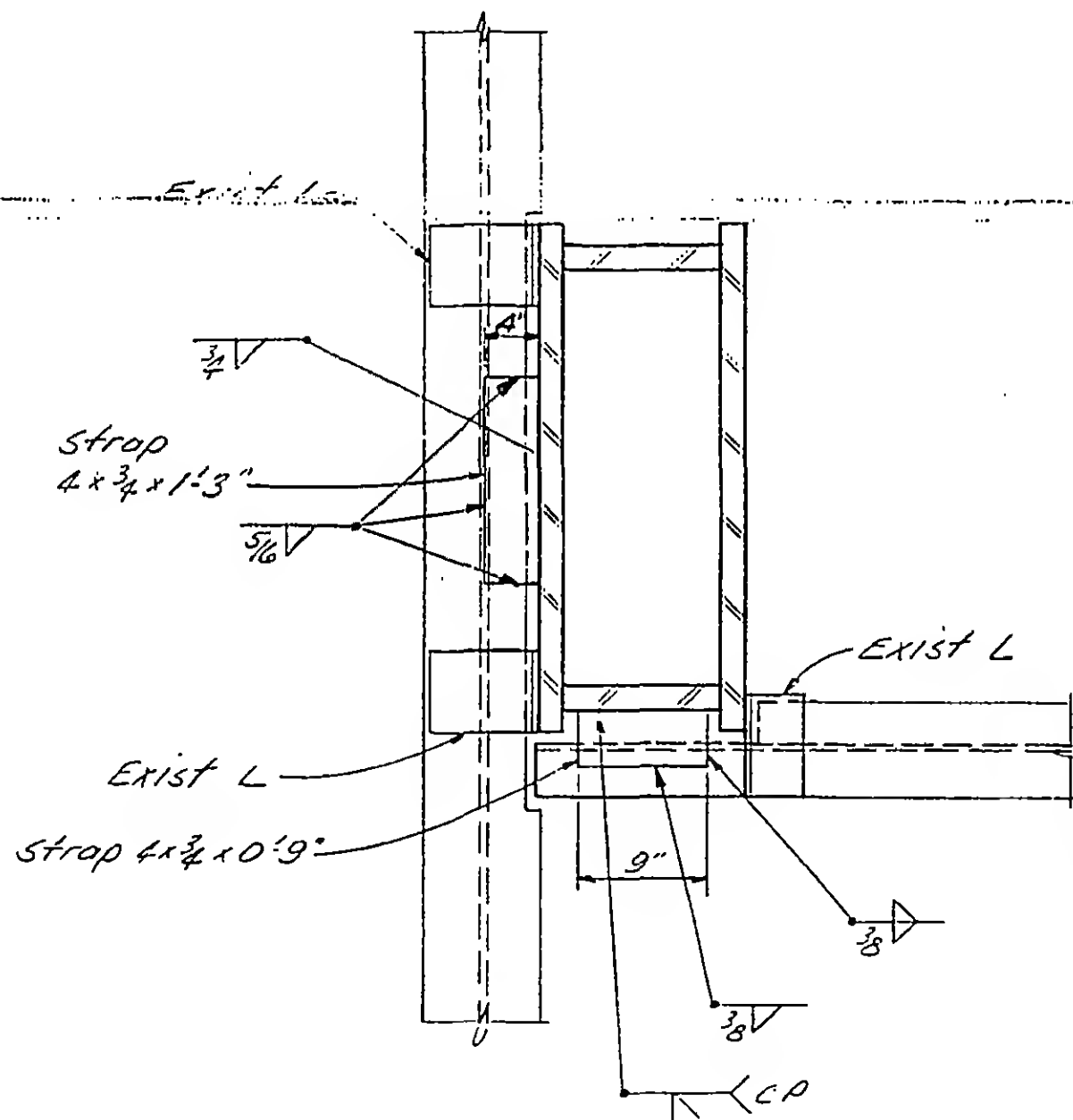
DATE

4/30/69

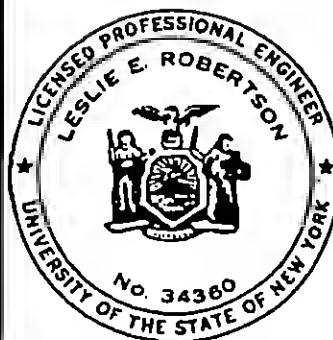
REVISIONS



DETAIL 67C



DETAIL 67D



DRAWN

J. Adams

REVIEWED

W. Brewer

18-A82-67.2

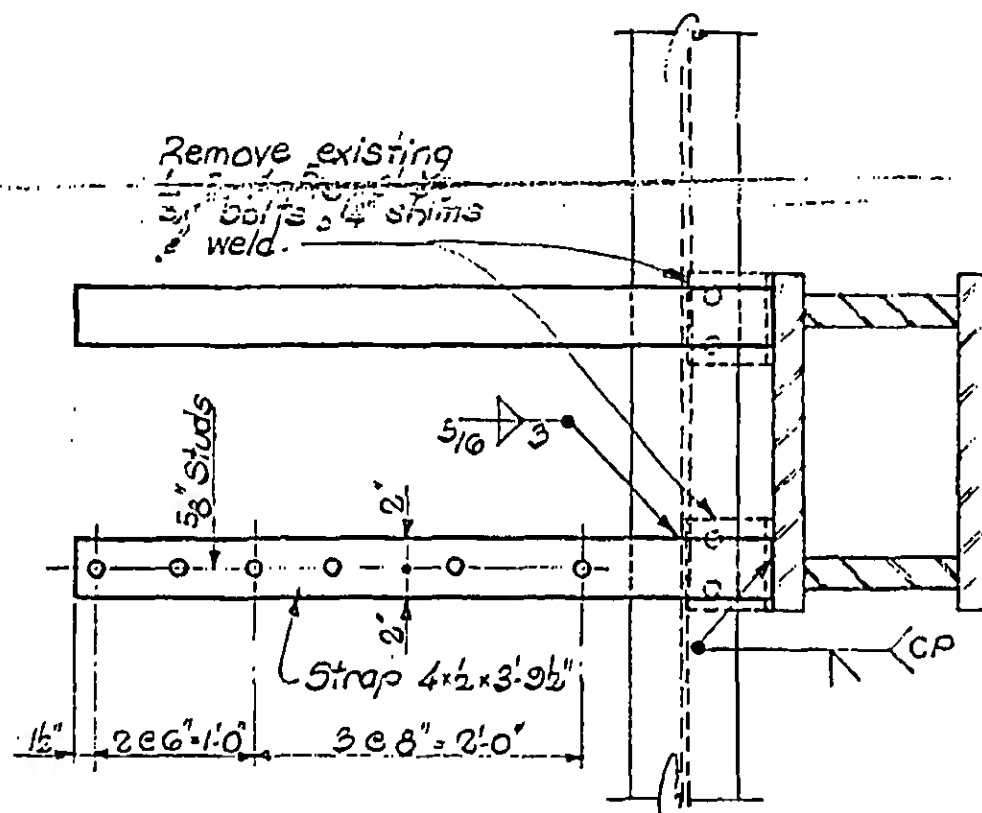
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

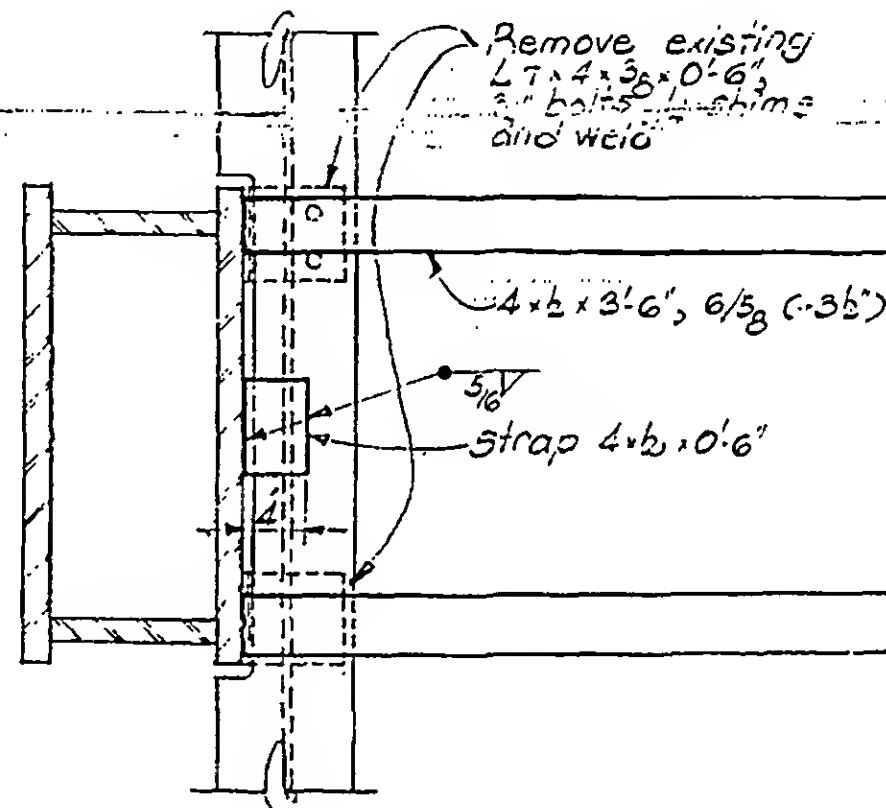
TITLE STRAP ANCHOR CORE DETAIL 68

DATE 4/30/69

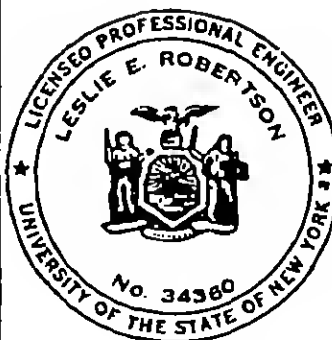
REVISIONS



DETAIL G8A



DETAIL GOB



DE 412470

DRAWN
S.T.M.

REVIEWS

REVIEWED
W. Brewer

18-AB2-68

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

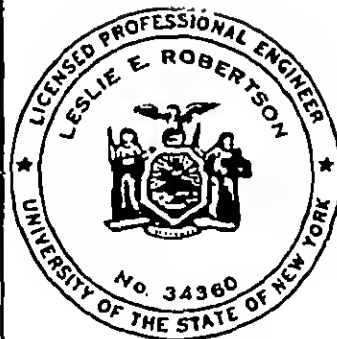
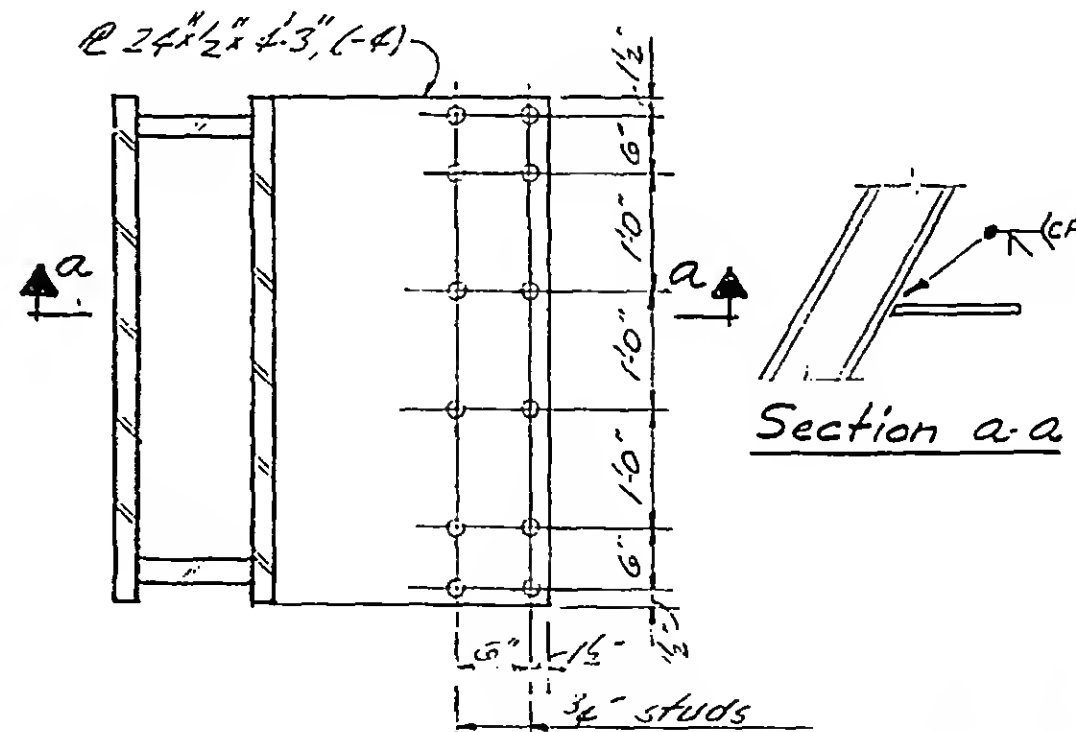
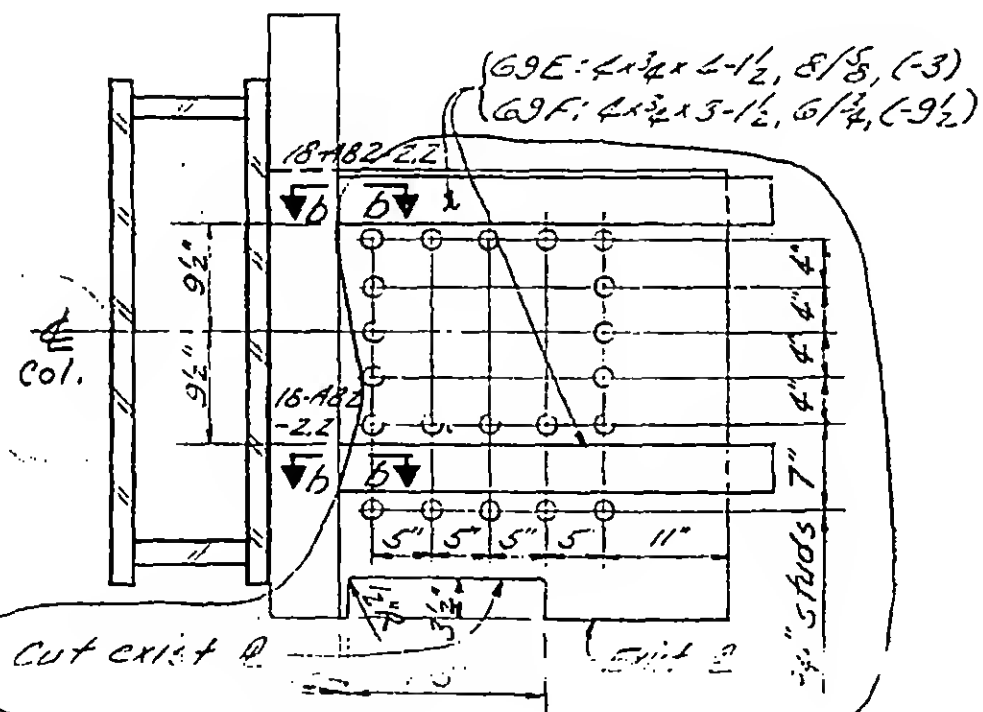
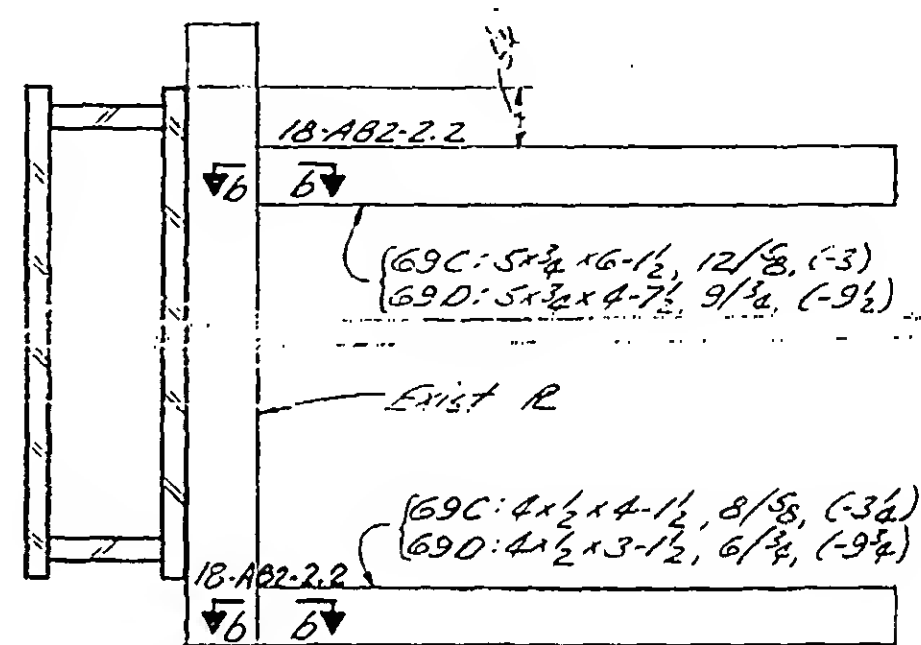
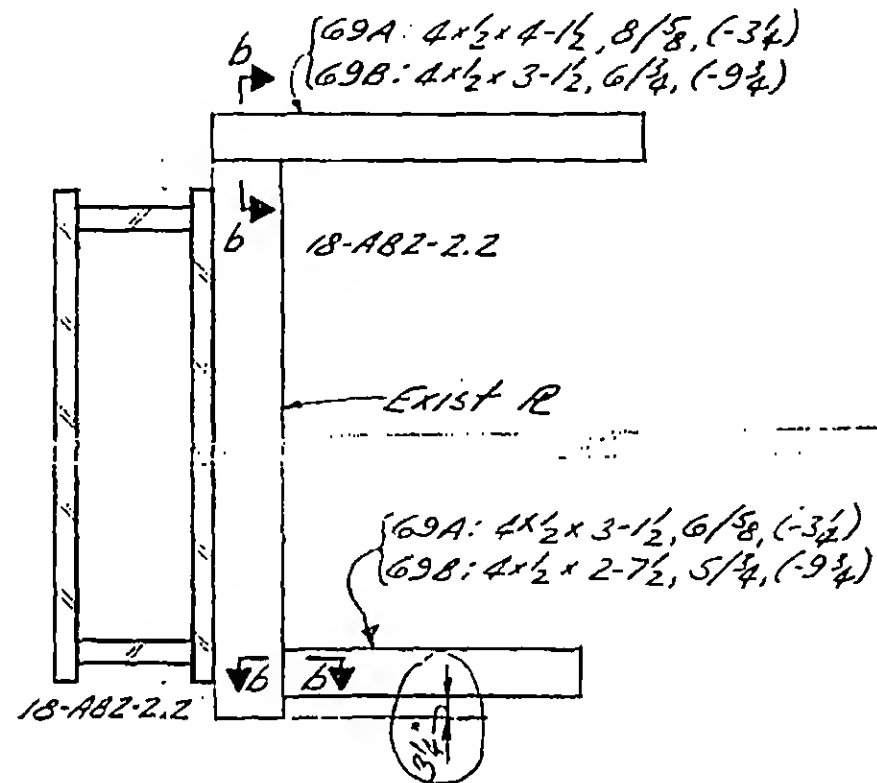
PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - CORE - DETAIL 69

DATE 5-20-69

REVISIONS

10/1/69



DESIGNED

DRAWN

REVIEWED

DESIGNED
 DRAWN
 REVIEWED
 C. Brewer

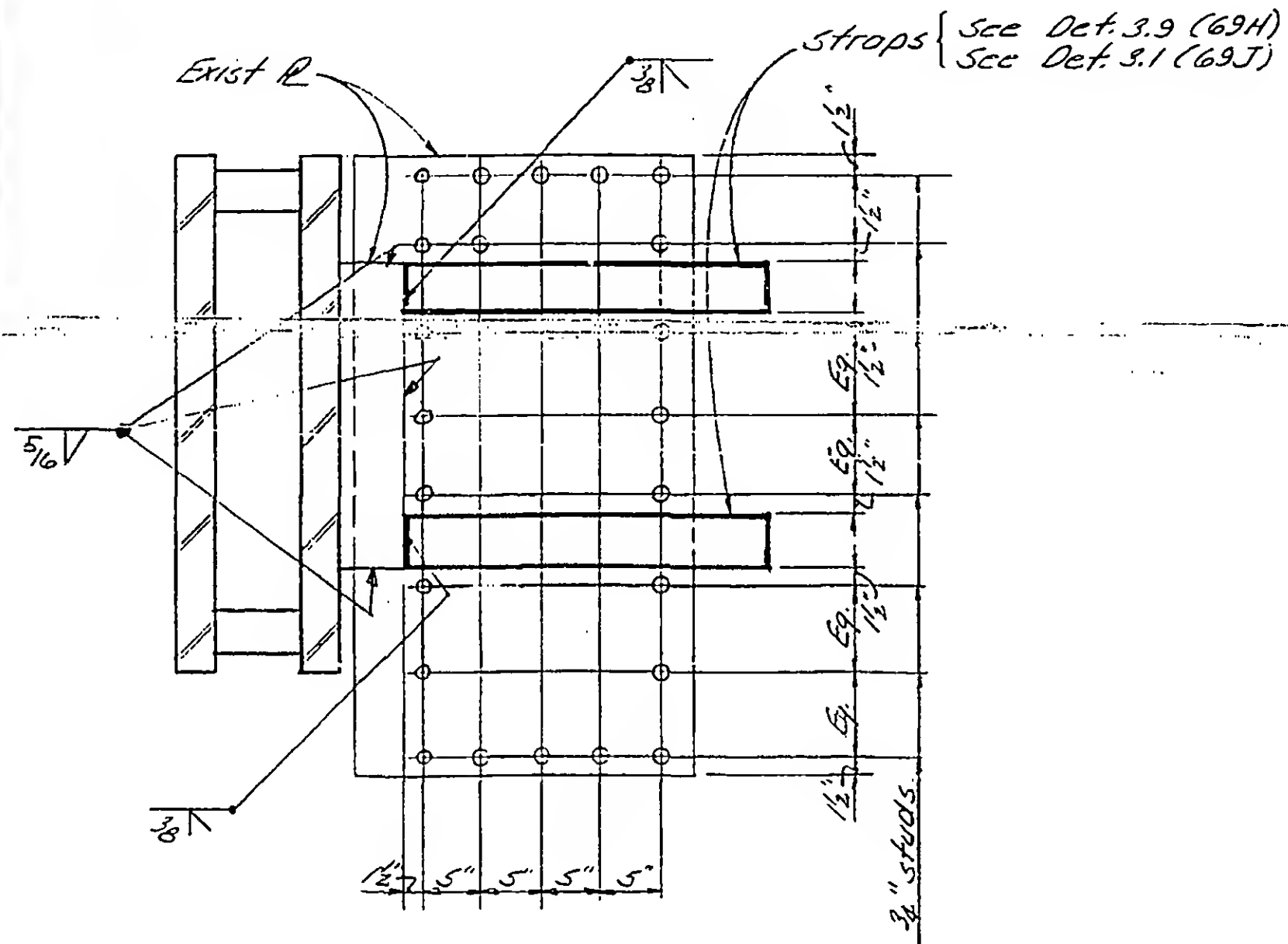
18-AB2-69.1

Structural & Civil Engineers

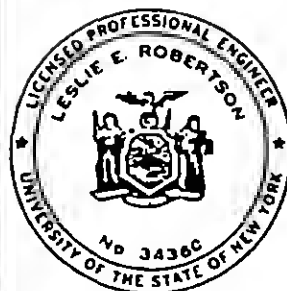
TITLE STRAP ANCHORS - CORE - DETAIL 69

| | |
|------|---------|
| DATE | 10-1-69 |
|------|---------|

REVISIONS



Details 69H & 69J



SIGNALS

DRAWN

REVIEWED

18-AB2-69.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

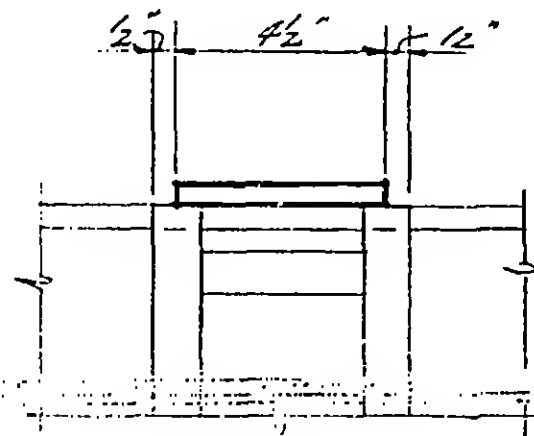
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PROJECT THE WORLD TRADE CENTER

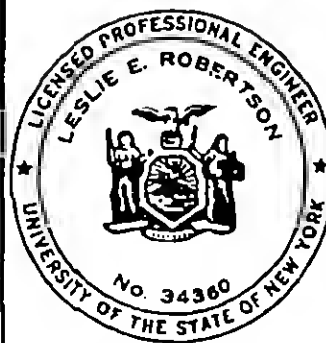
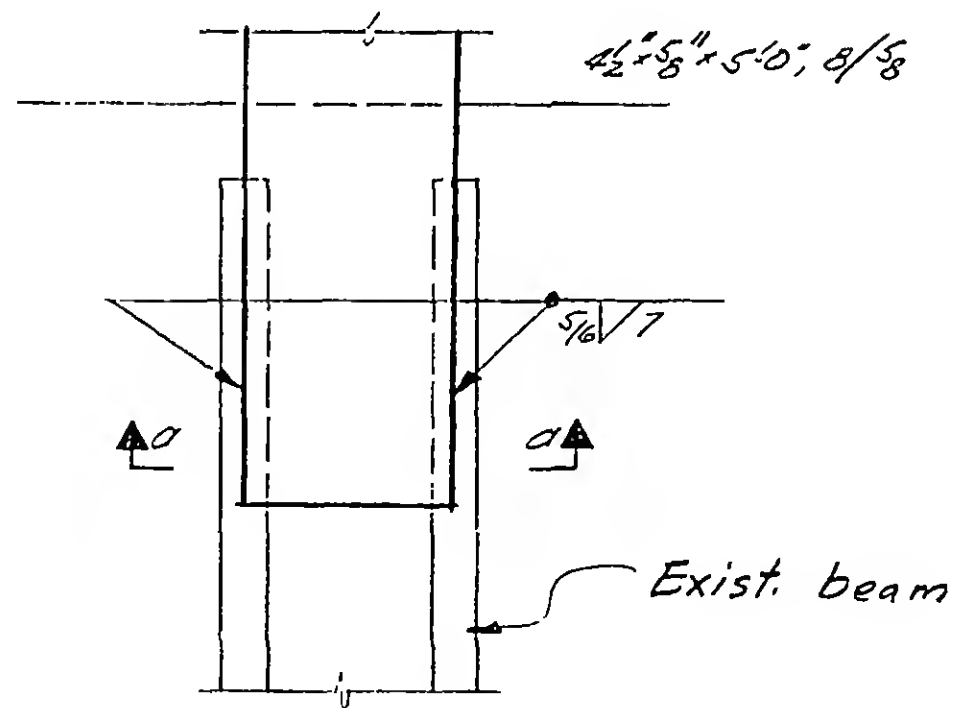
TITLE STRAP ANCHOR - CORE - DETAIL 70

DATE 5-20-69

REVISIONS



Section a-a



DESIGNED

DRAWN

J. Adams

REVIEWED

W. Brewster

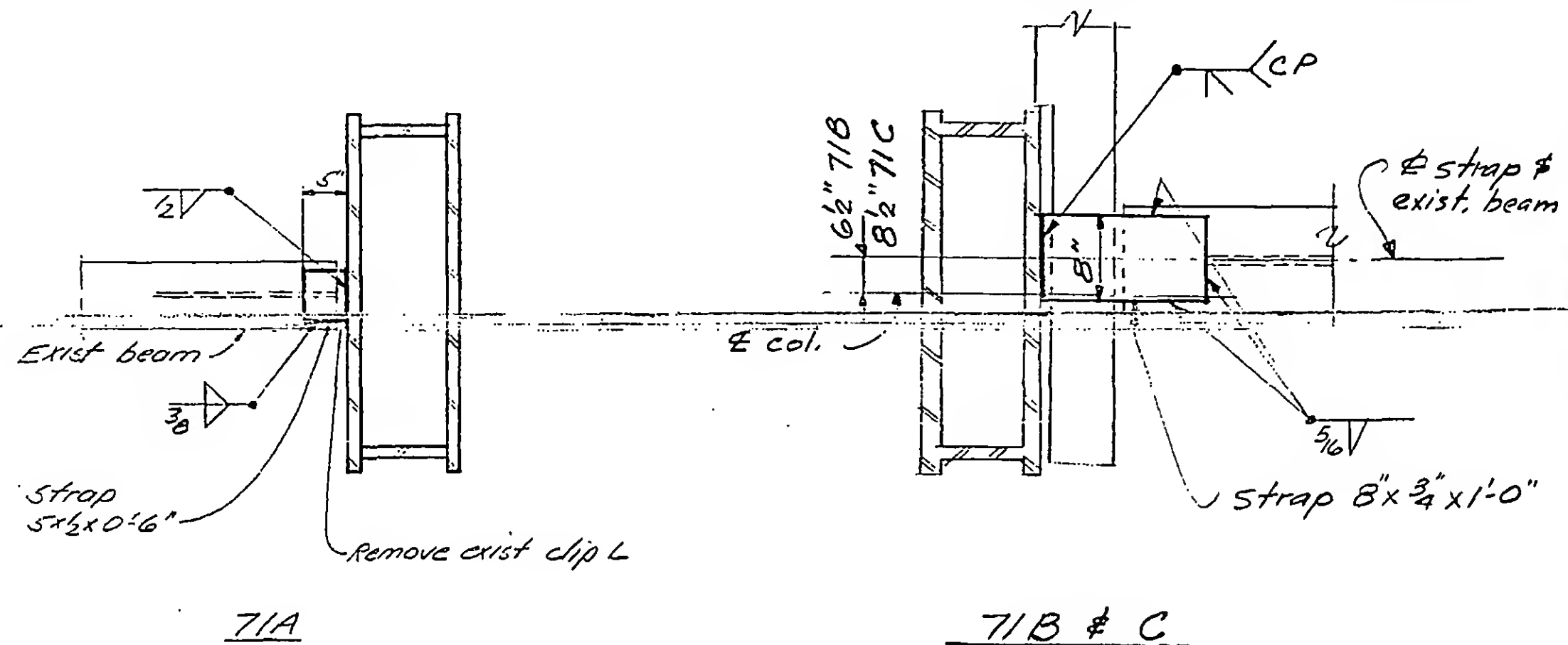
18-AB2-70

Structural & Civil Engineers

TITLE STRAP ANCHORS - CORE - DETAIL 71

DATE 5-20-69

REVISIONS



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REVIEWED

W. Brewer

18-A82-71

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

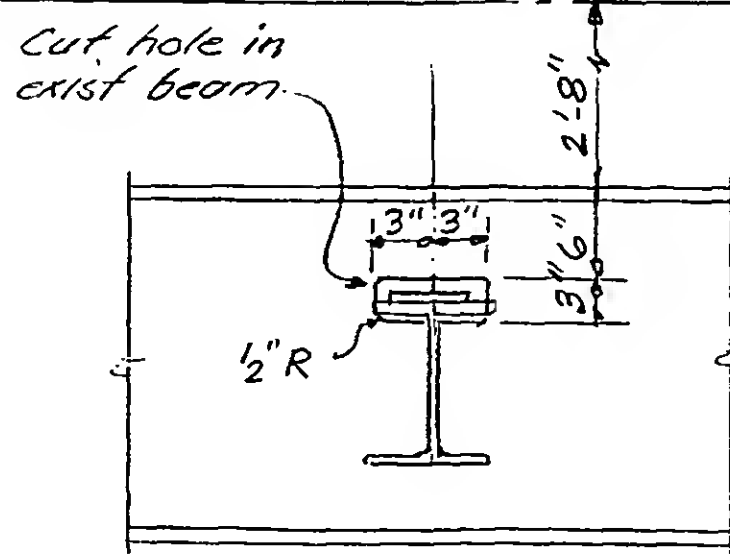
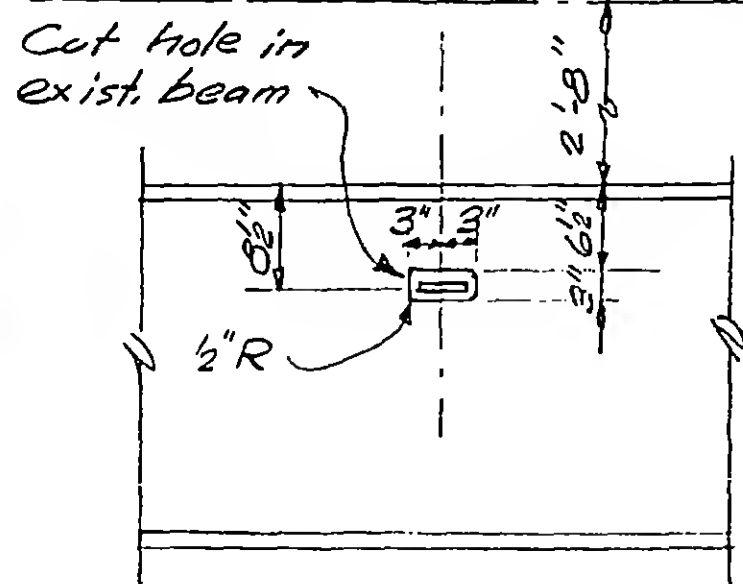
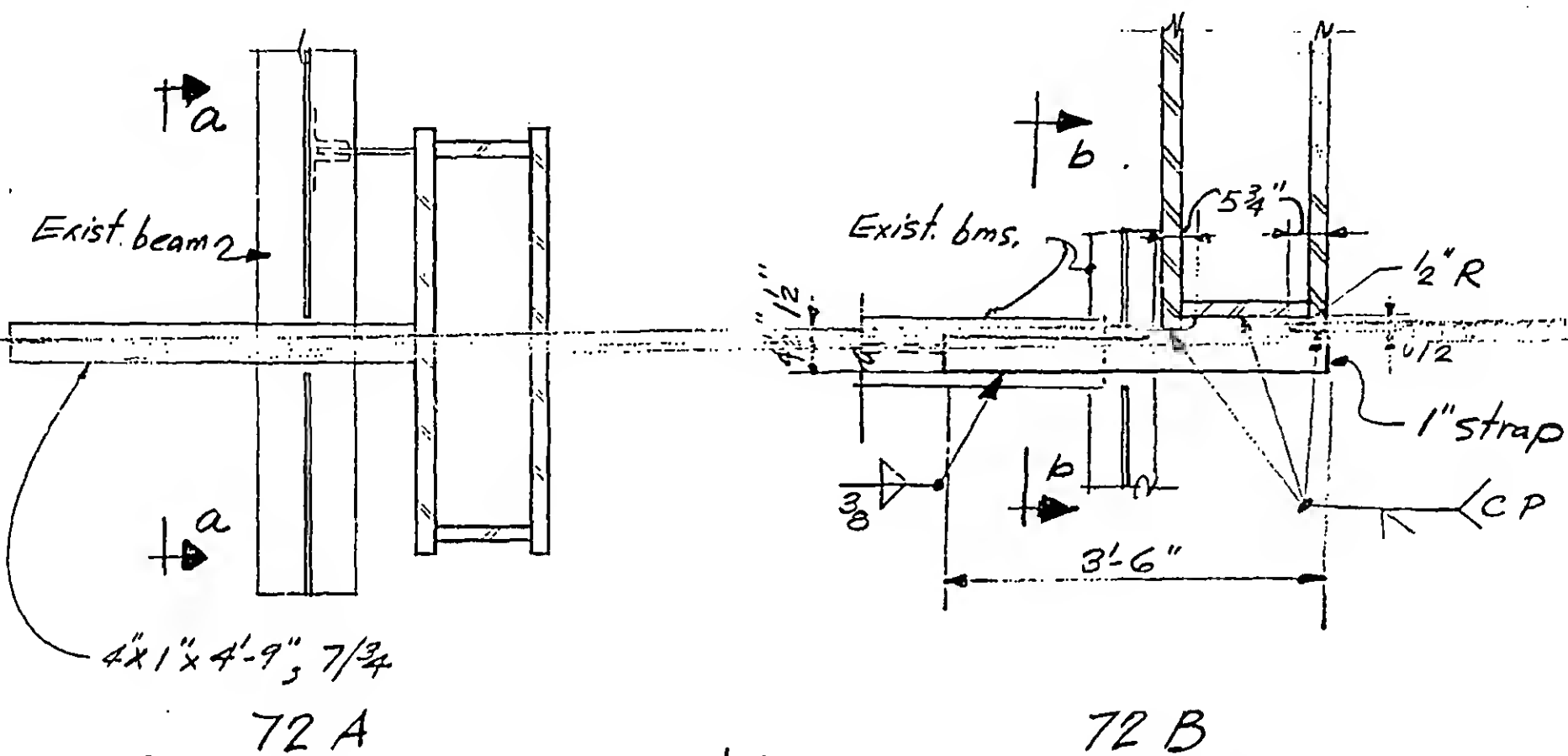
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PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHOR - CORE - DETAIL 72

DATE 5-20-69

REVISIONS



DESIGNED

DRAWN J. Adams

REVIEWED

C. Brewer

18-AB2-72

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

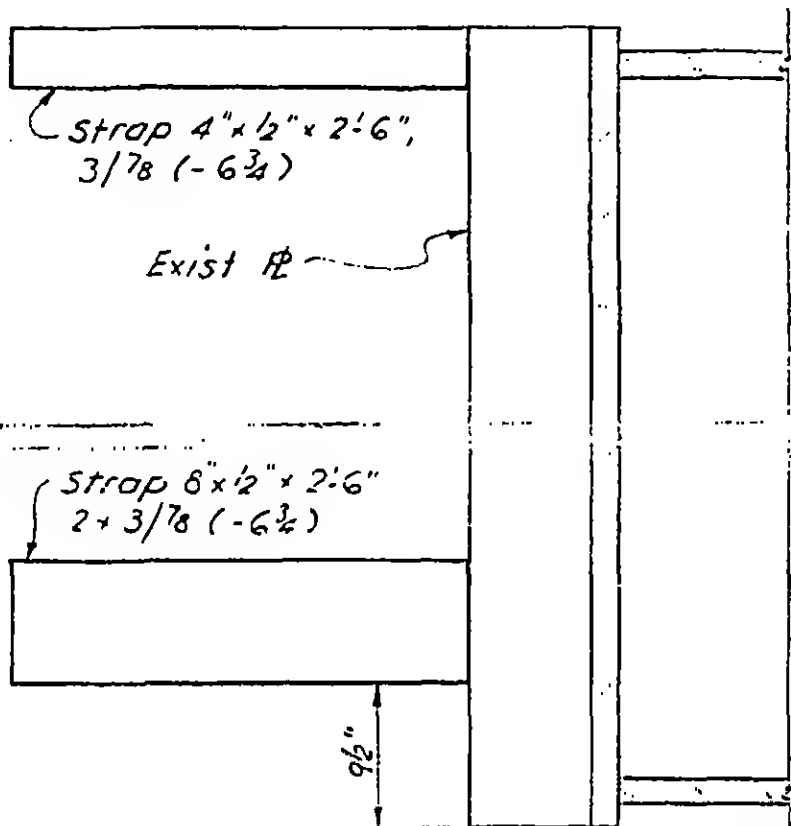
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PROJECT THE WORLD TRADE CENTER

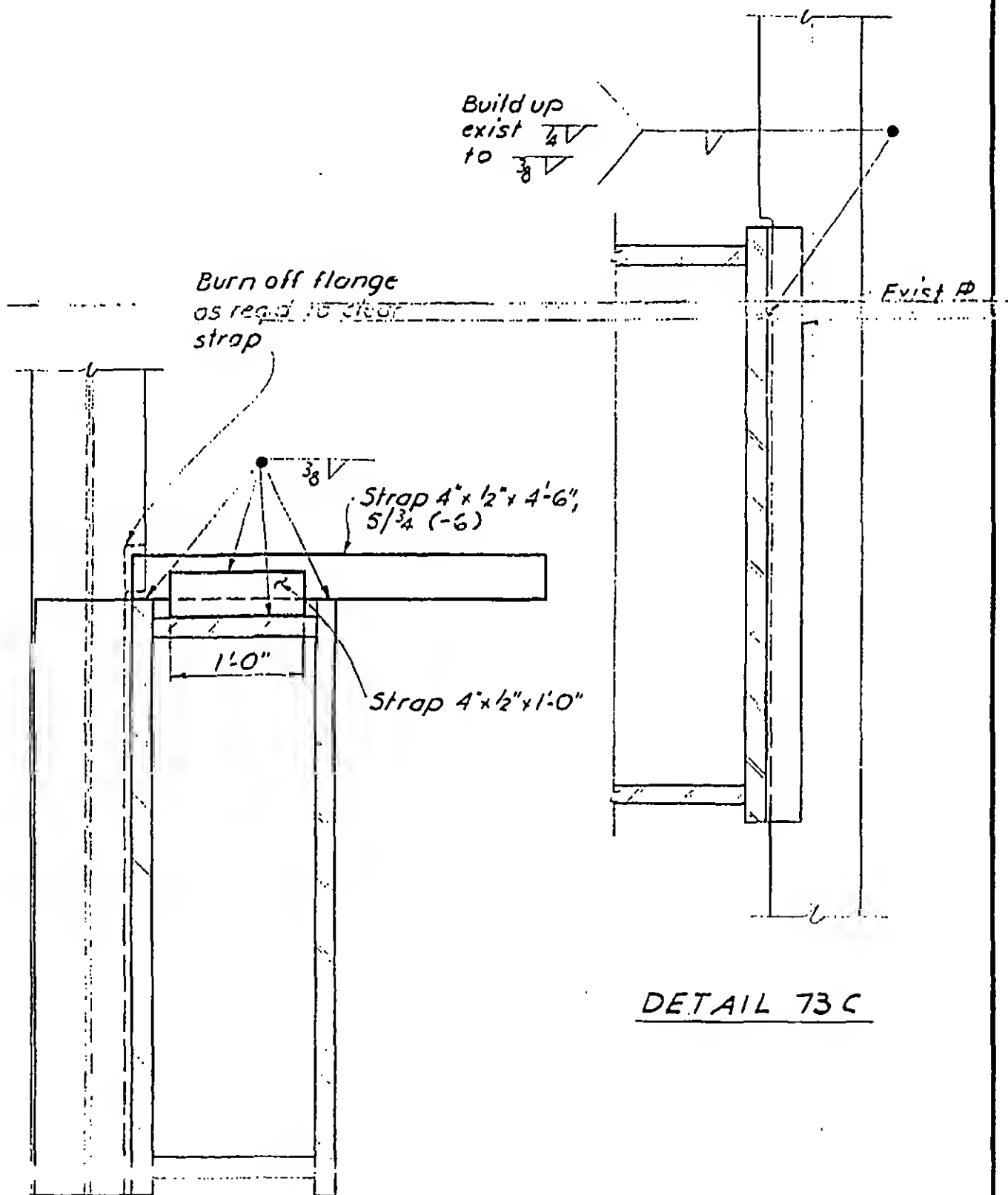
TITLE STRAP ANCHORS- CORE- DETAIL 73

DATE 5-28-69

REVISIONS

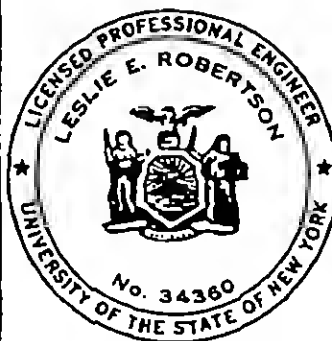


DETAIL 73 A



DETAIL 73 B

DETAIL 73 C



DESIGNED

DRAWN

REVIEWED

18-AB2-73

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

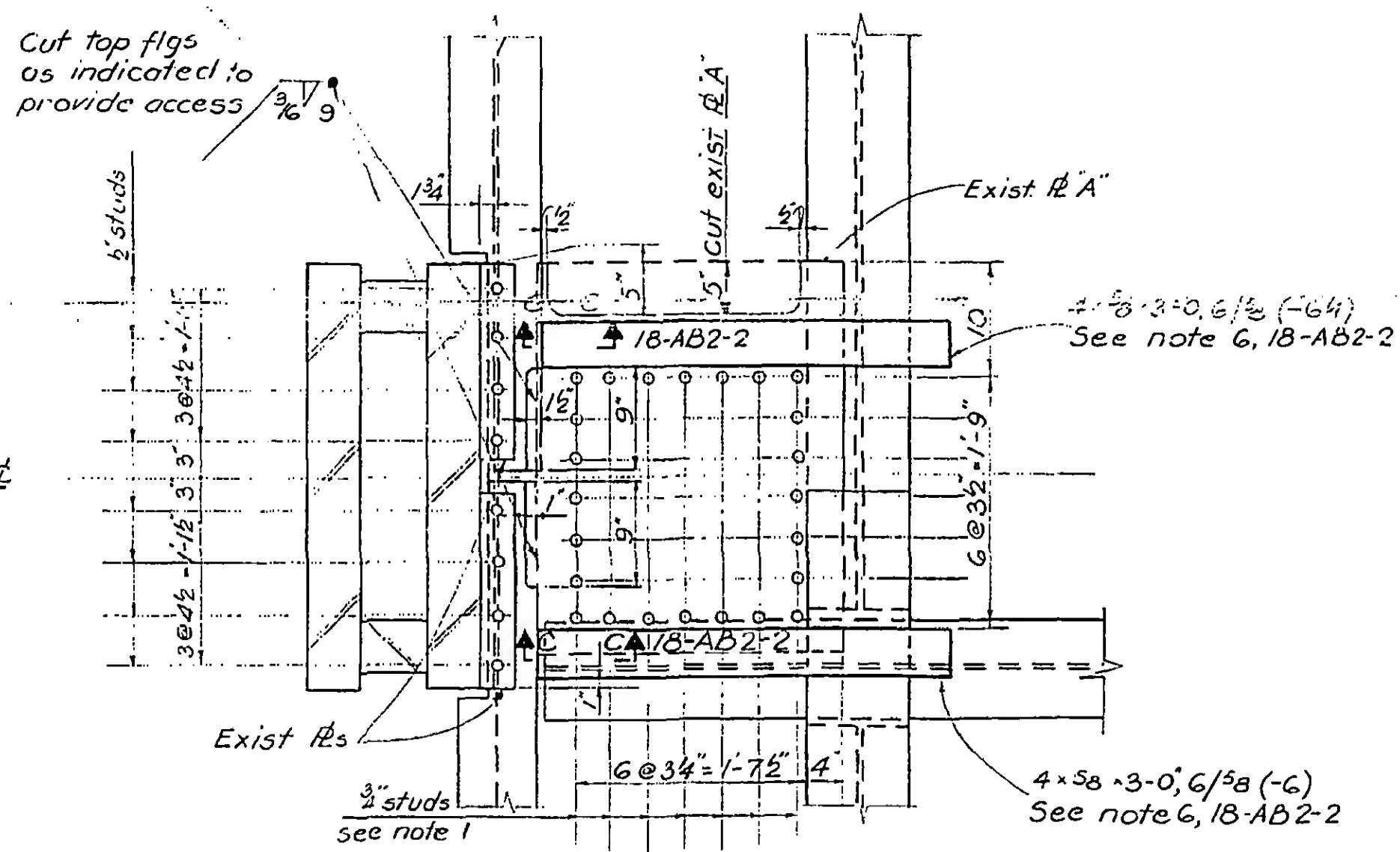
PROJECT THE WORLD TRADE CENTER

TITLE

STRAP ANCHORS - CORE - DETAIL 74

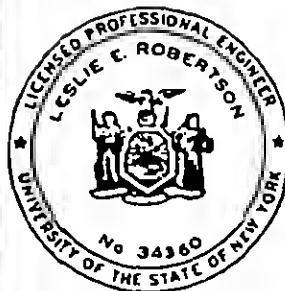
DATE 10-1-69

REVISIONS



DETAIL 74A

Note 1. Studs to be place on exist \emptyset "A"
prior to installation of straps



DESIGNED

DRAWN

D.C. Huggins

REVIEWED

18-AB2-74.1

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

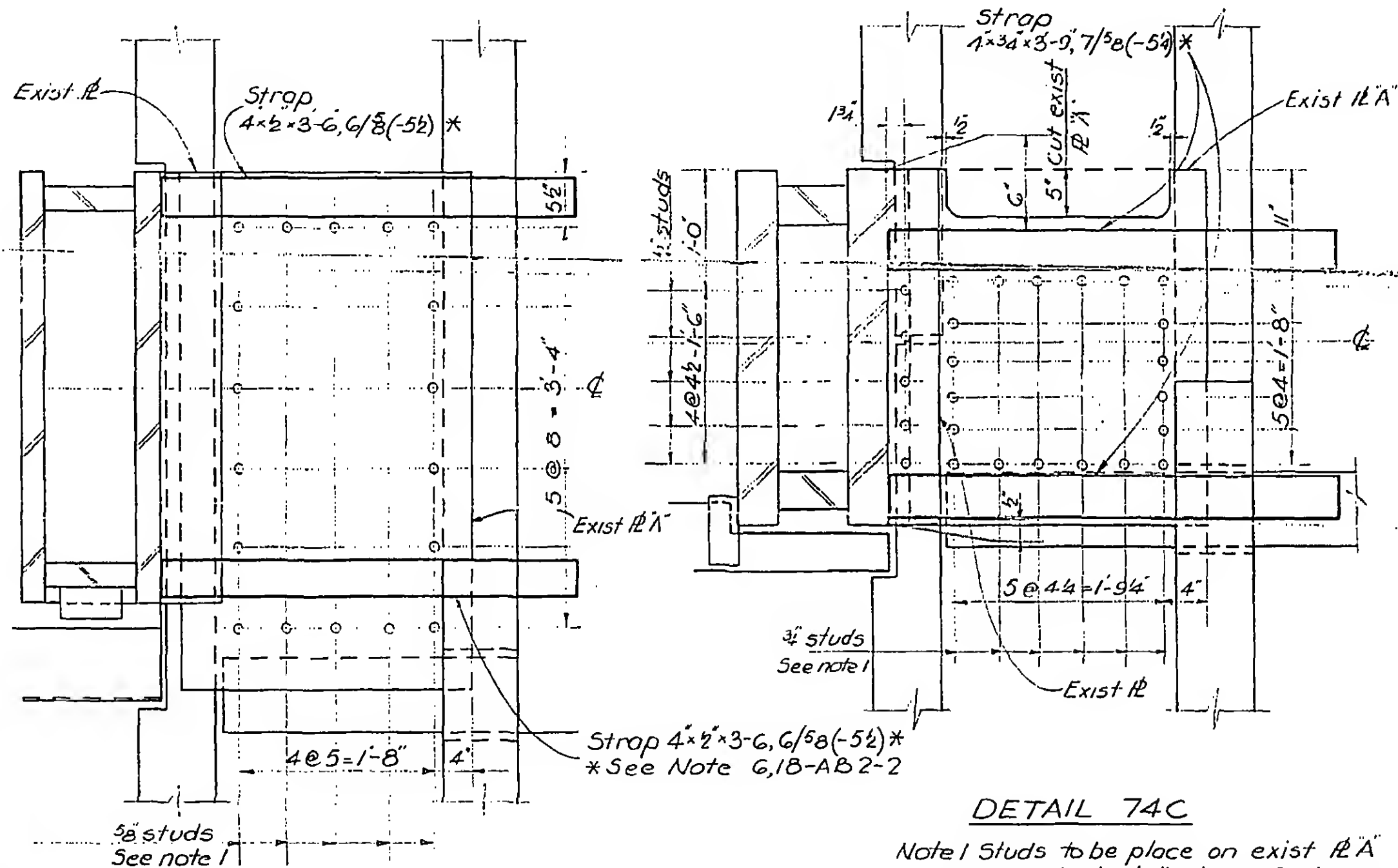
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PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHOR-CORE DETAIL 74

DATE 10-1-69

REVISIONS



DETAIL 74C

Note 1 Studs to be place on exist R prior to installation of straps

DETAIL 74B

Note 1 Studs to be place on existing R prior to installation of straps



DESIGNED

DRAWN

D.C. Huggins

REVIEWED

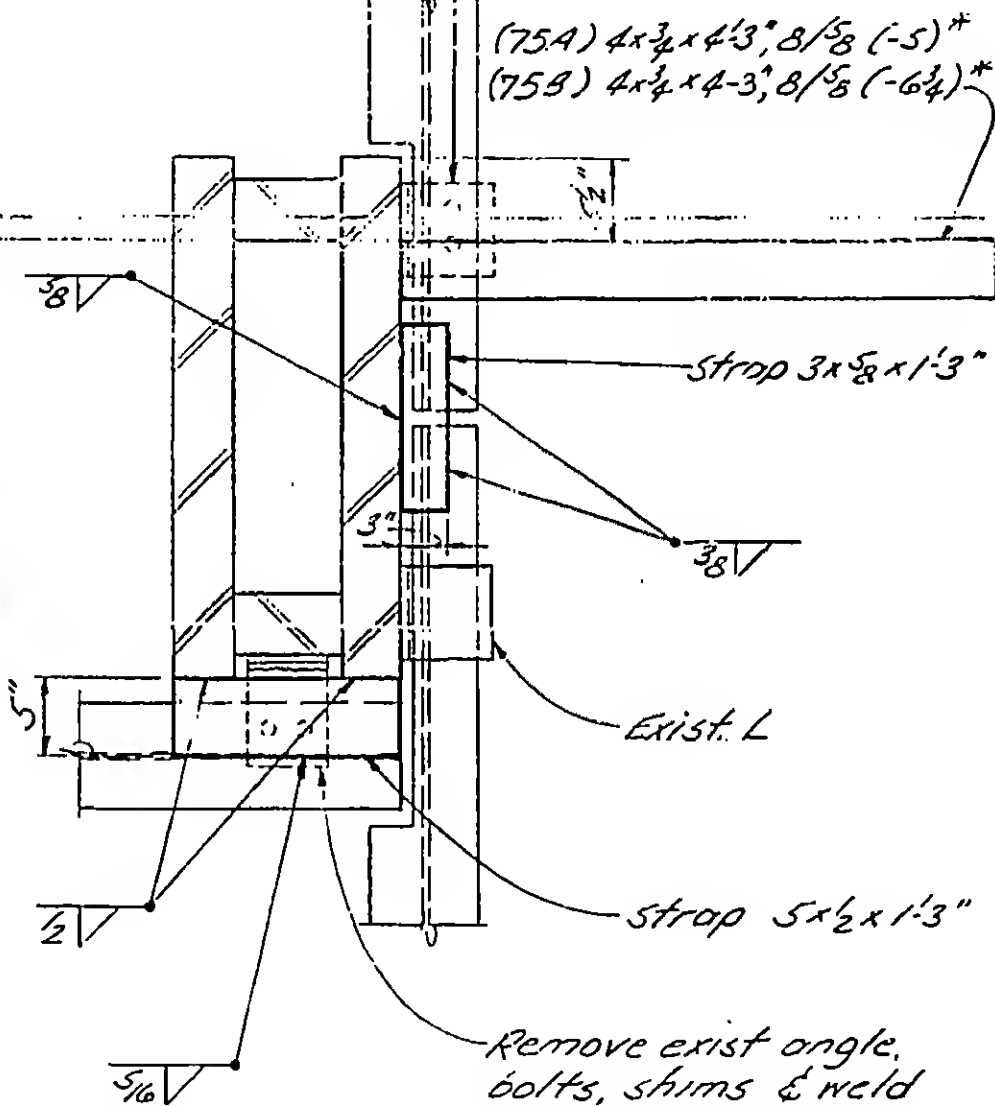
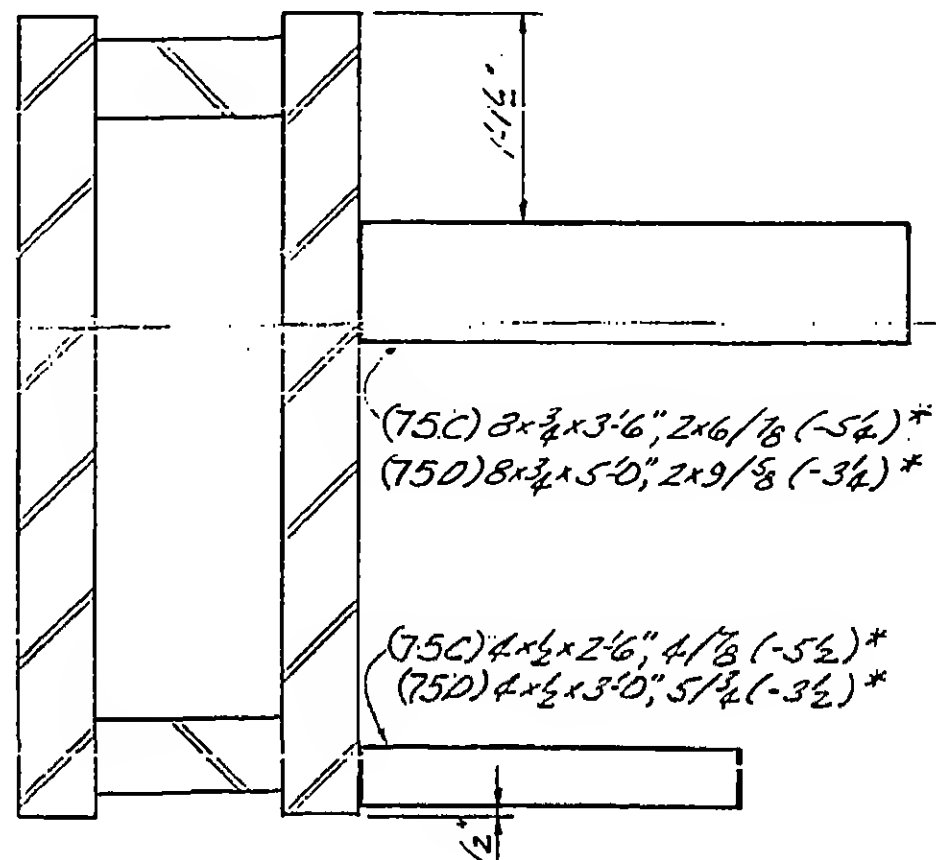
1B-AB2-74.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT *THE WORLD TRADE CENTER*TITLE *STRAP ANCHOR - CORE - DETAIL 75*DATE *10-1-69*

REVISIONS

*Remove exist. angle,
bolts, shims & weld**Details 75A and 75B**Details 75C and 75D***See Note 6, 18-ABZ-2**18-ABZ-75*

DESIGNED

DRAWN

J. Adams

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT

THE WORLD TRADE CENTER

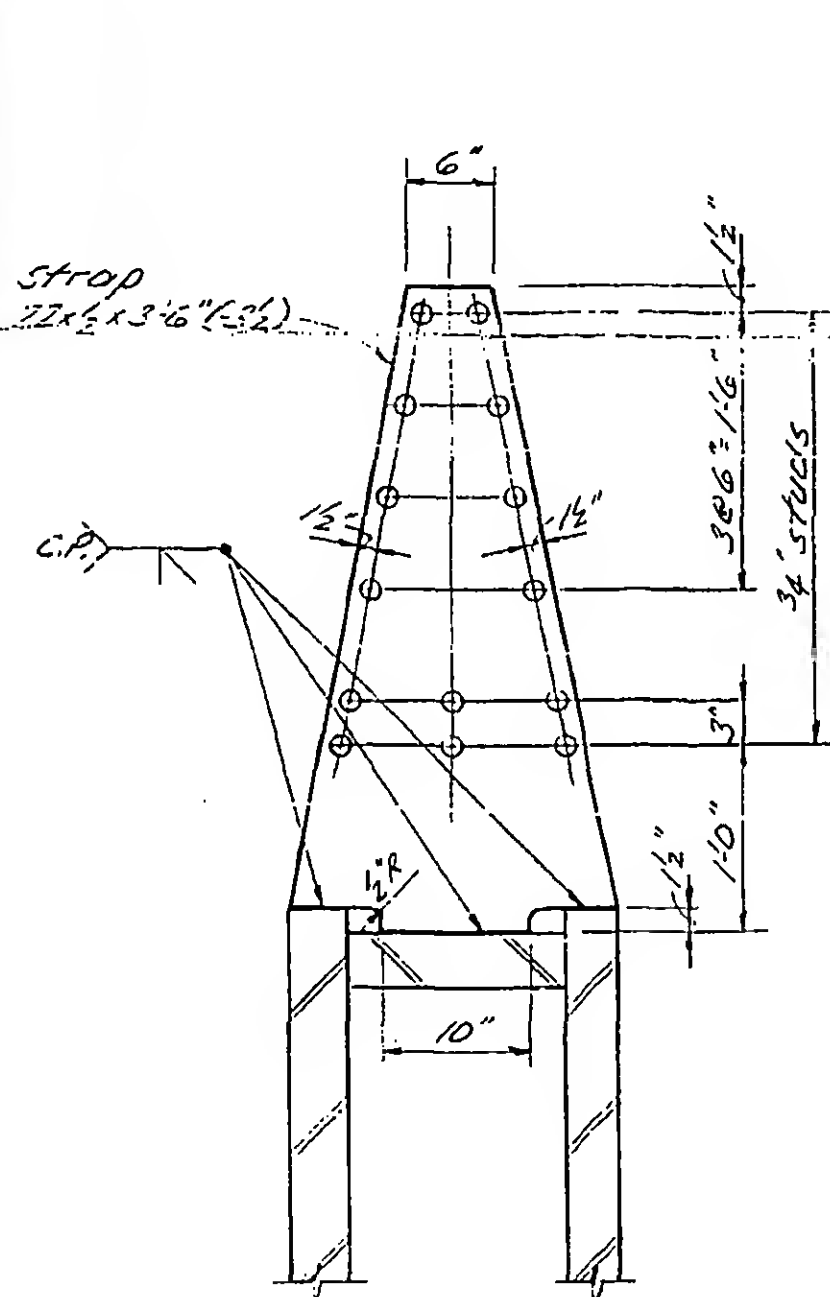
TITLE

STRAP ANCHORS - CORE - DETAIL 76

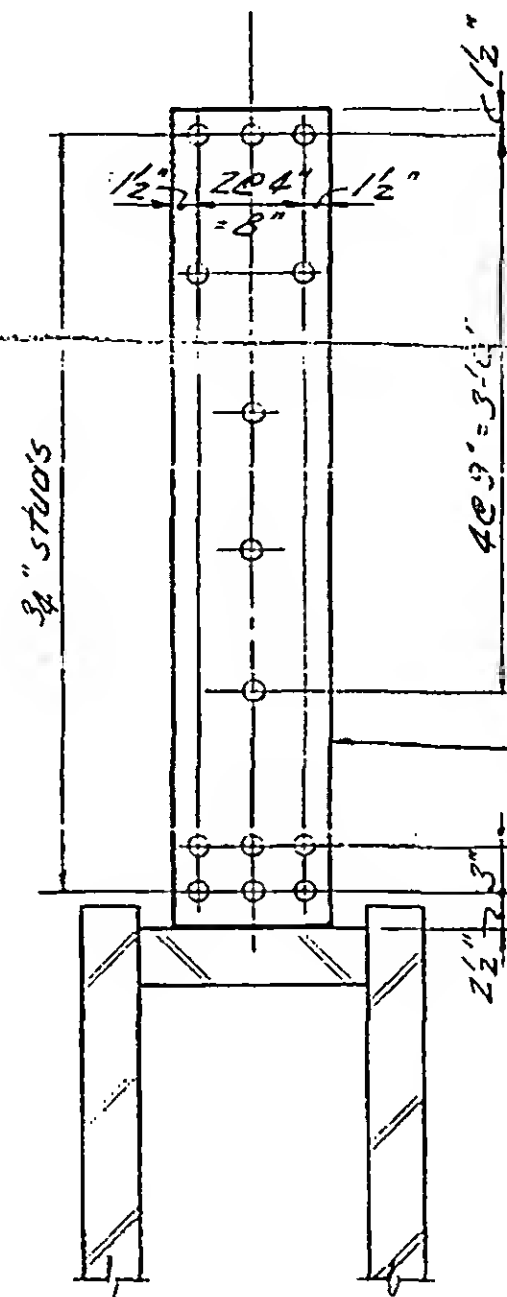
DATE

10-1-69

REVISIONS



Detail 76A



Detail 76B



DESIGNED

DRAWN

J. Adams

REVIEWED

18-AB2-76

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

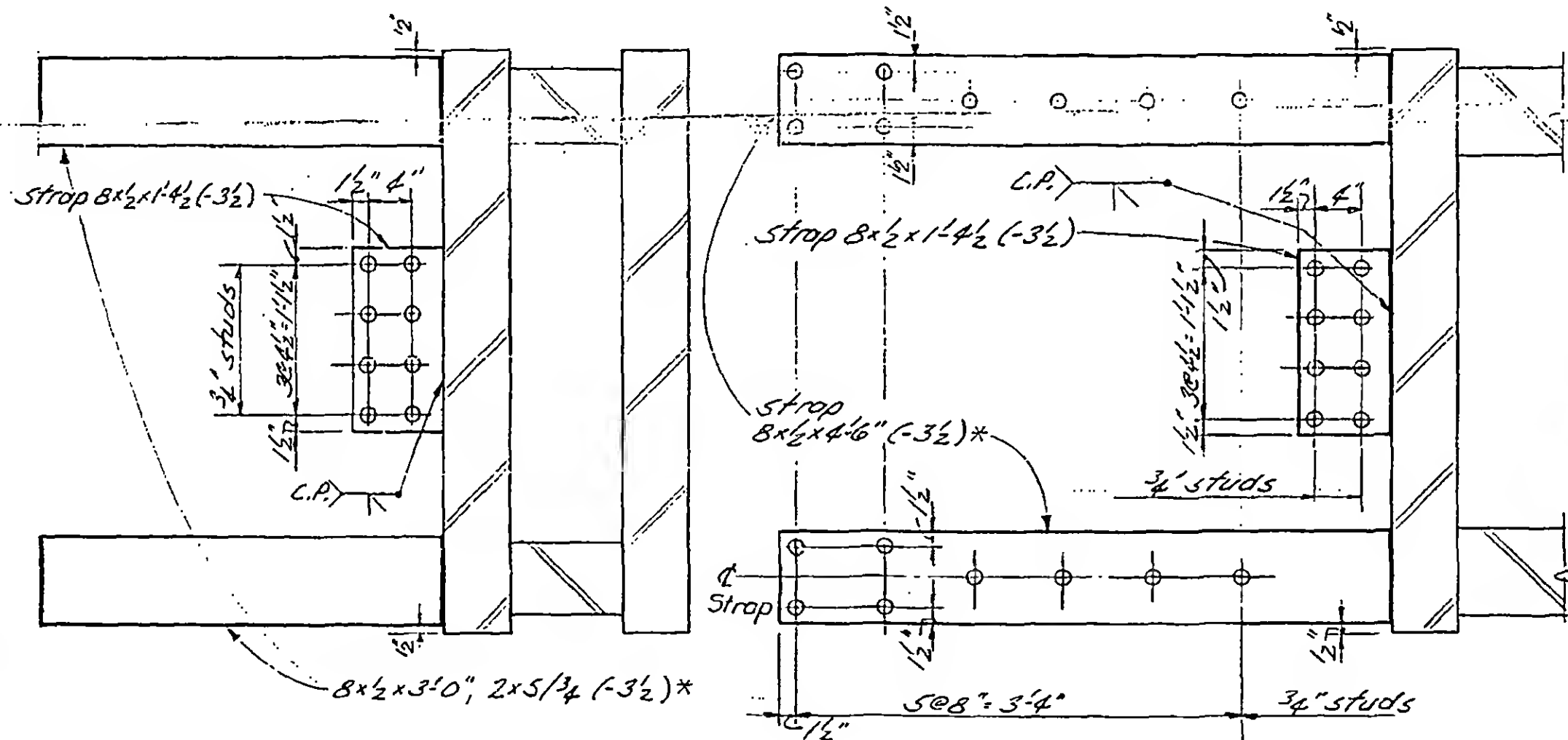
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TITLE STRAP ANCHOR - CORE - DETAIL 77

DATE 10-1-69

REVISIONS



Detail 77A

Detail 77B

* See Note C
18-AB2-2

DESIGNED

DRAWN

J. Adams

REVIEWED

18-AB2-77.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

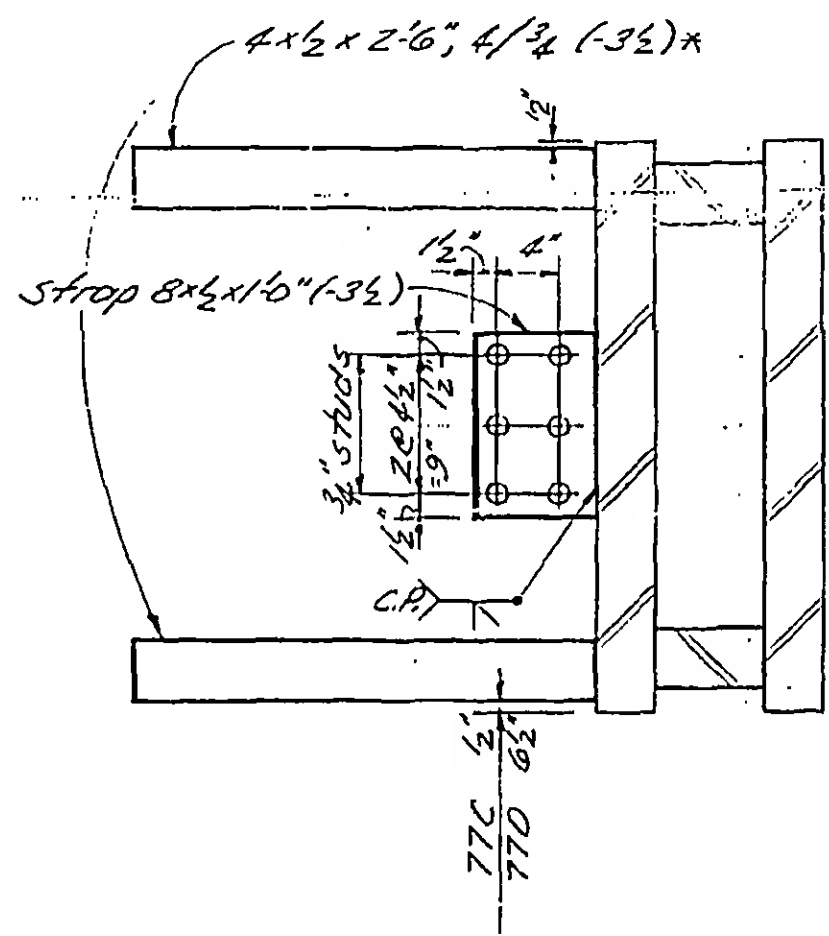
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PROJECT THE WORLD TRADE CENTER

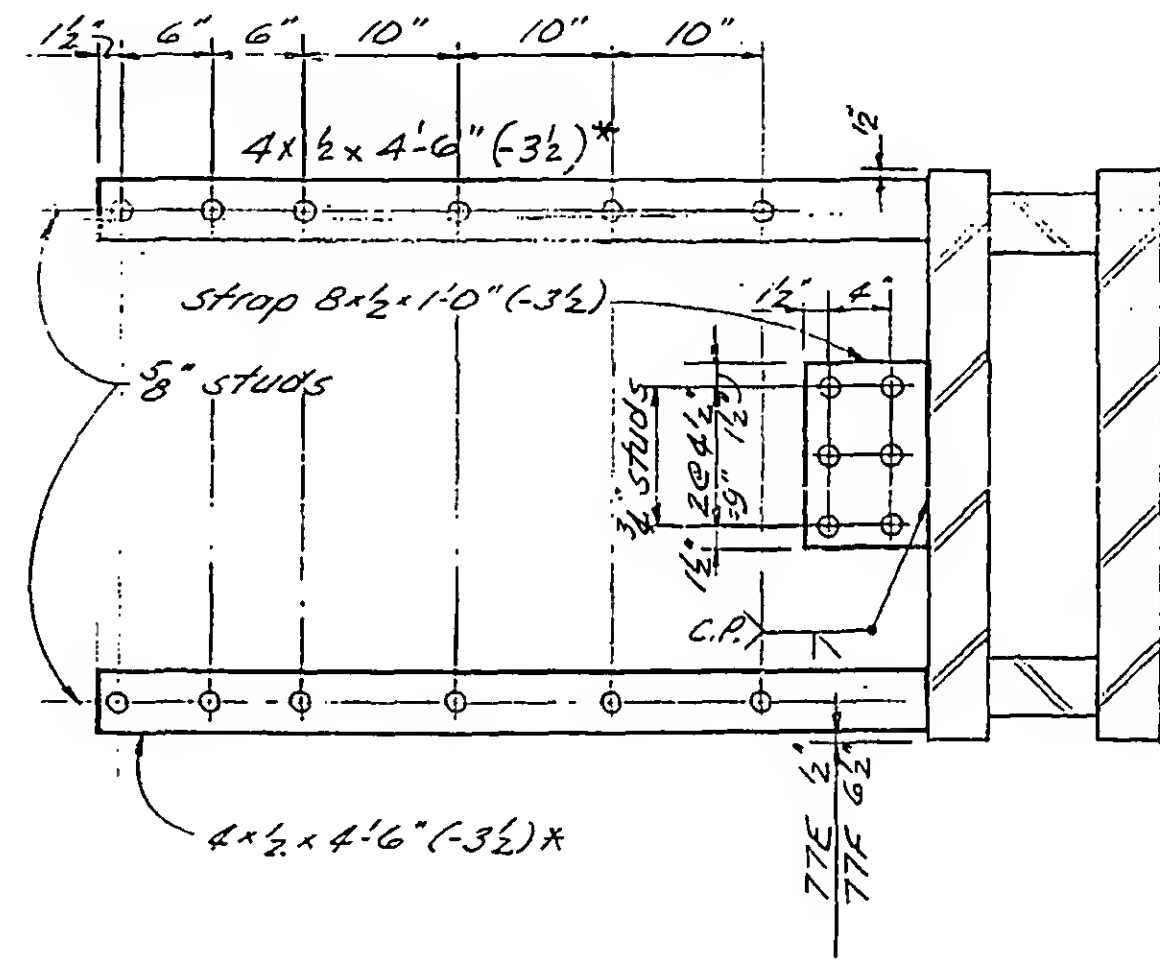
TITLE STRAP ANCHOR - CORE - DETAIL 77

DATE 10-1-69

REVISIONS



Details 77C and 77D



Details 77E and 77F

See Note 6
18-AB2-2



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DRAWN

J. Adams

REVIEWED

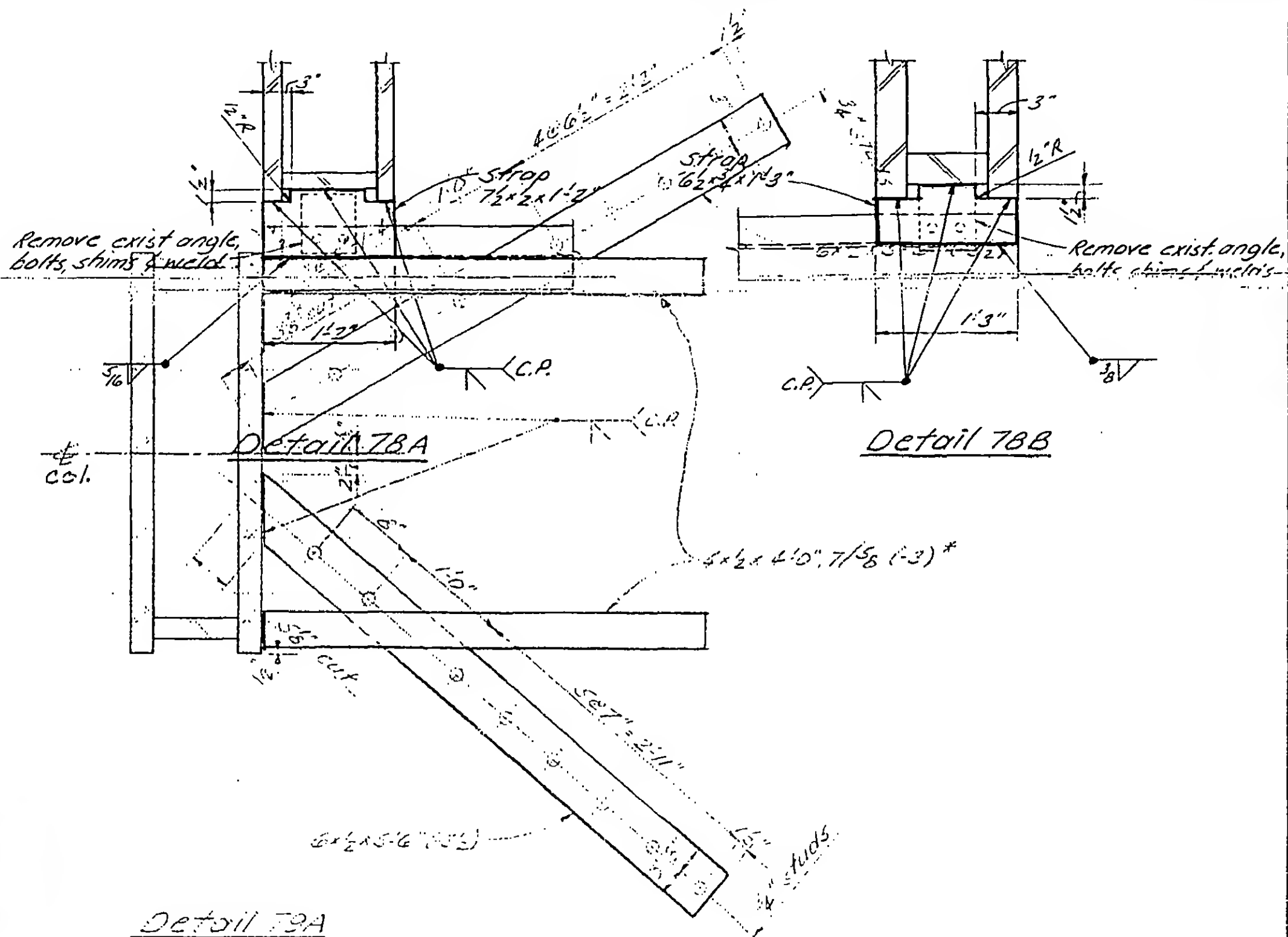
18-AB2-772

PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS - CORE - DETAIL 78

DATE 1001-169

REREVISIONS



DESIGNER

UNDRAWN

J. J. Adams

REVIEWED

ہم نے اپنے مقاصد کے لئے ان کے جہاد کو بے فائدہ قرار دیا۔

18185982078

MICROFILM CORRECTION GUIDE (M 9)

CORRECTION

The preceding document has been re-
photographed to assure legibility and its
image appears immediately hereafter.

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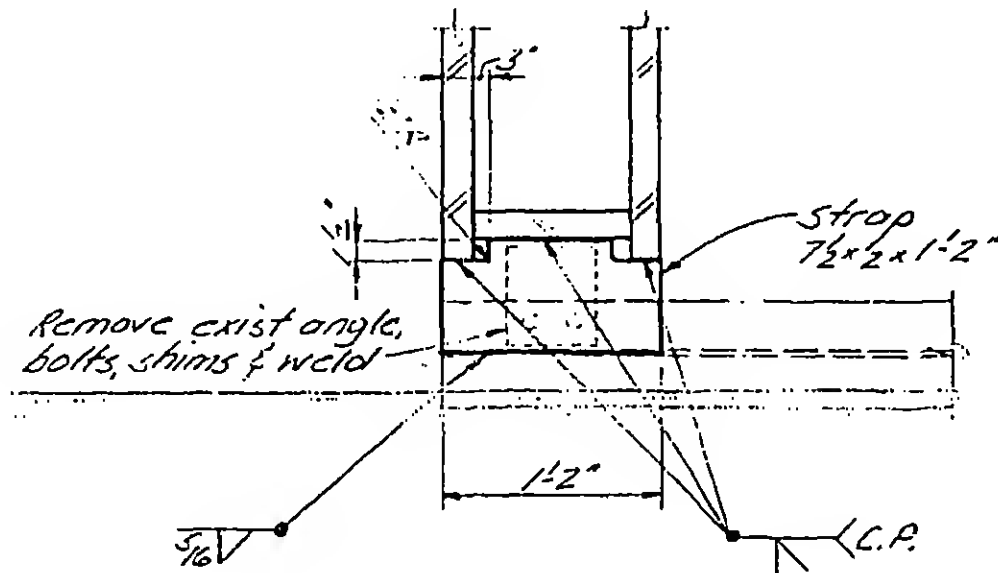
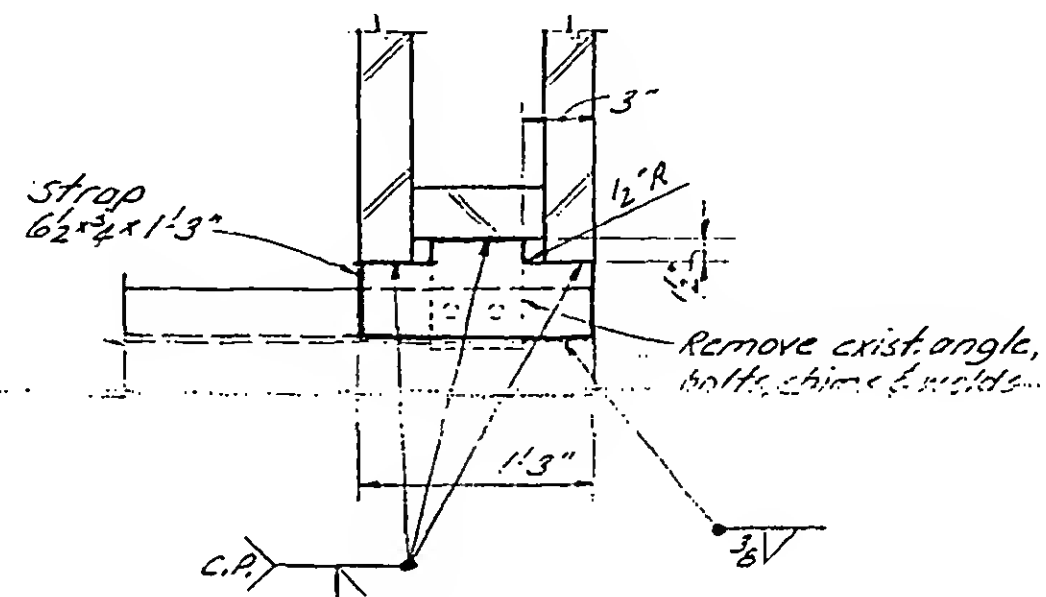
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PROJECT THE WORLD TRADE CENTER

TITLE STRAP ANCHORS-CORE- DETAIL 78

DATE 10/1/69

REVISIONS

Detail 78ADetail 78B

DESIGNED

DRAWN

J. Robertson

REVIEWED

18-AB2-78

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

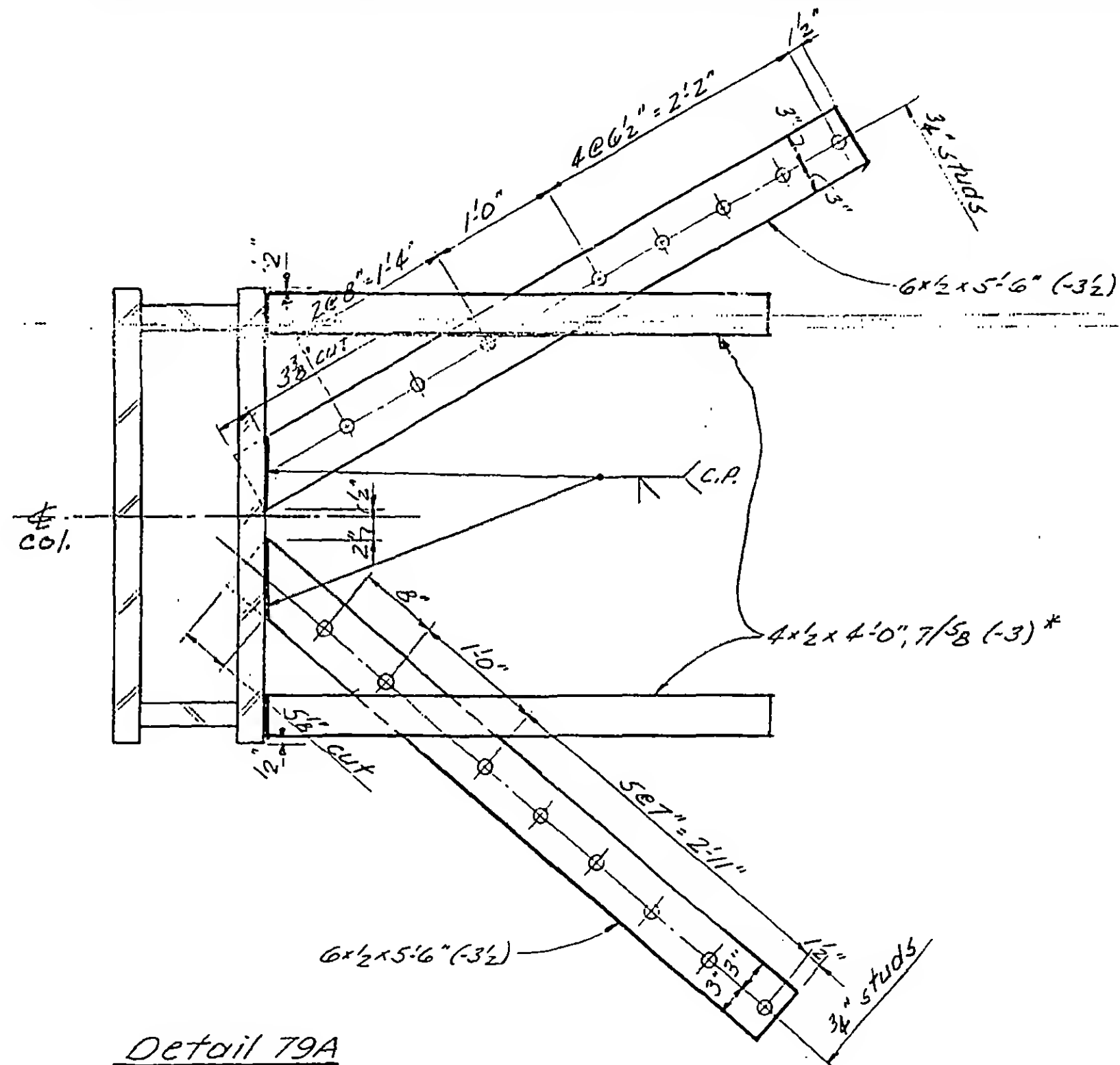
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TITLE STRAP ANCHORS - CORE - DETAIL 79

DATE 10-1-69

REVISIONS



* See Note 6, 18-AB2-2.



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DRAWN

J. Adams

REVIEWED

18-AB2-79.1

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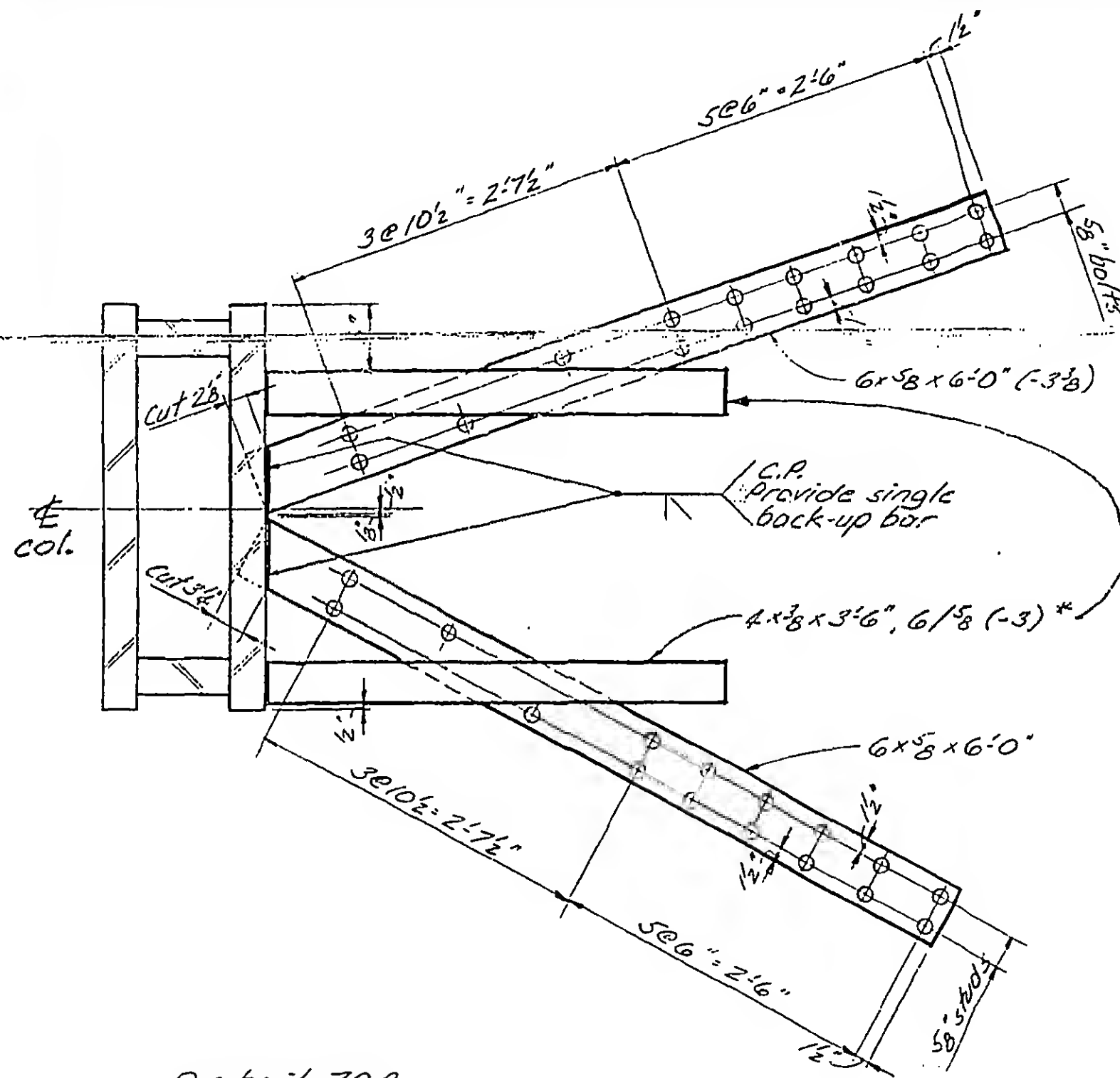
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TITLE STRAP ANCHORS - CORE - DETAIL 79

DATE 10-1-69

REVISIONS



Detail 79B

* See Note 6, 18-AB2-2



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J. Adams

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18-AB2-79.2

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

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PROJECT

THE WORLD TRADE CENTER

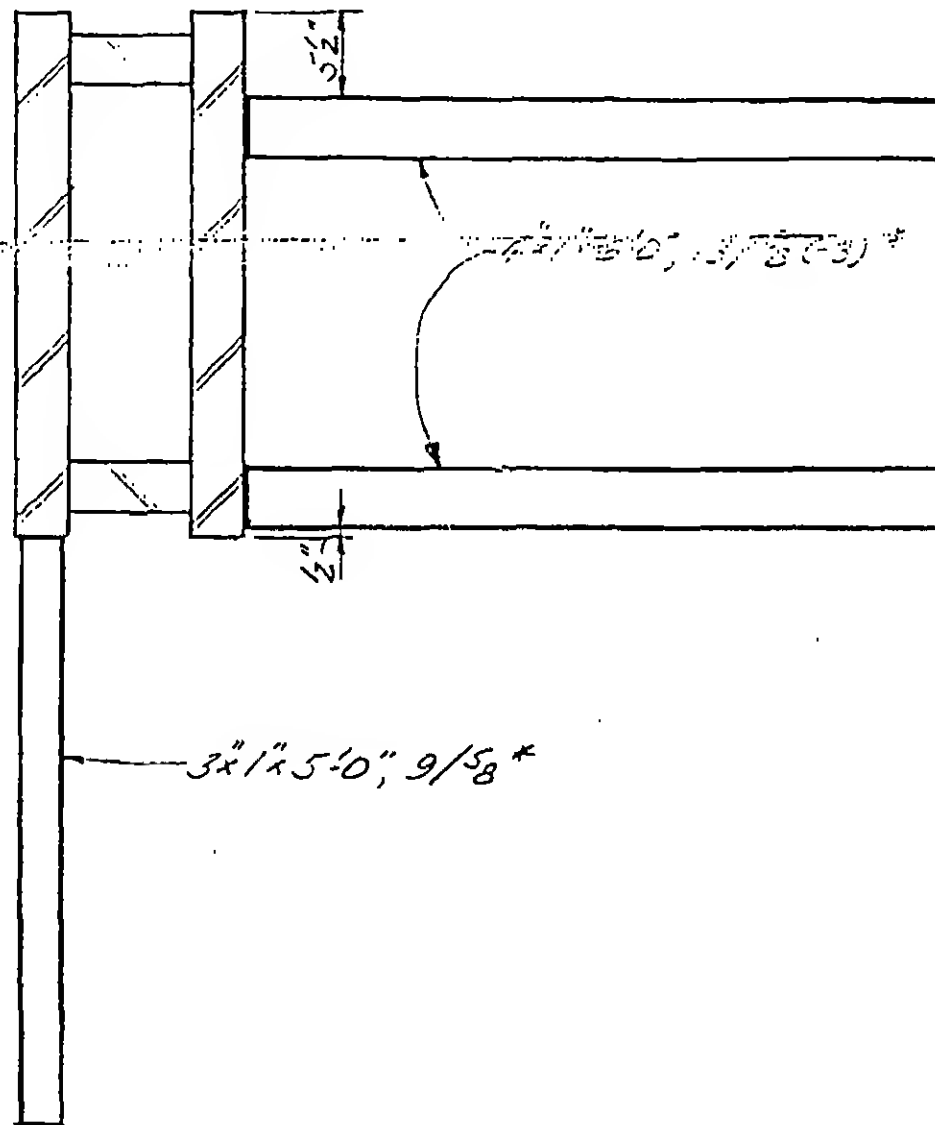
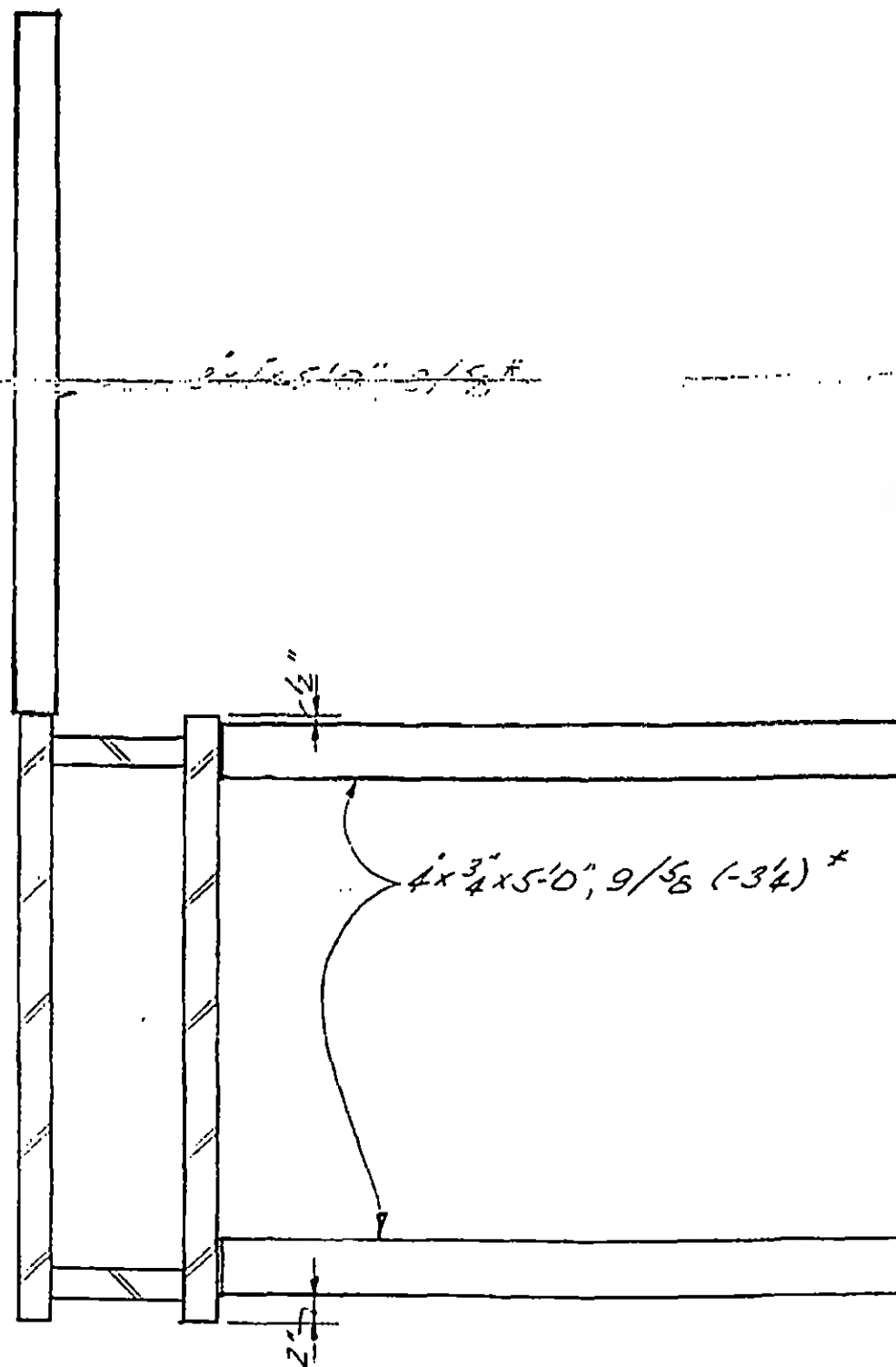
TITLE

STRAP ANCHORS - CORE - DETAIL 80

DATE

10-1-69

REVISIONS

Detail 80ADetail 80B

* See Note 6, 18-AB2-2



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DRAWN

J. Adams

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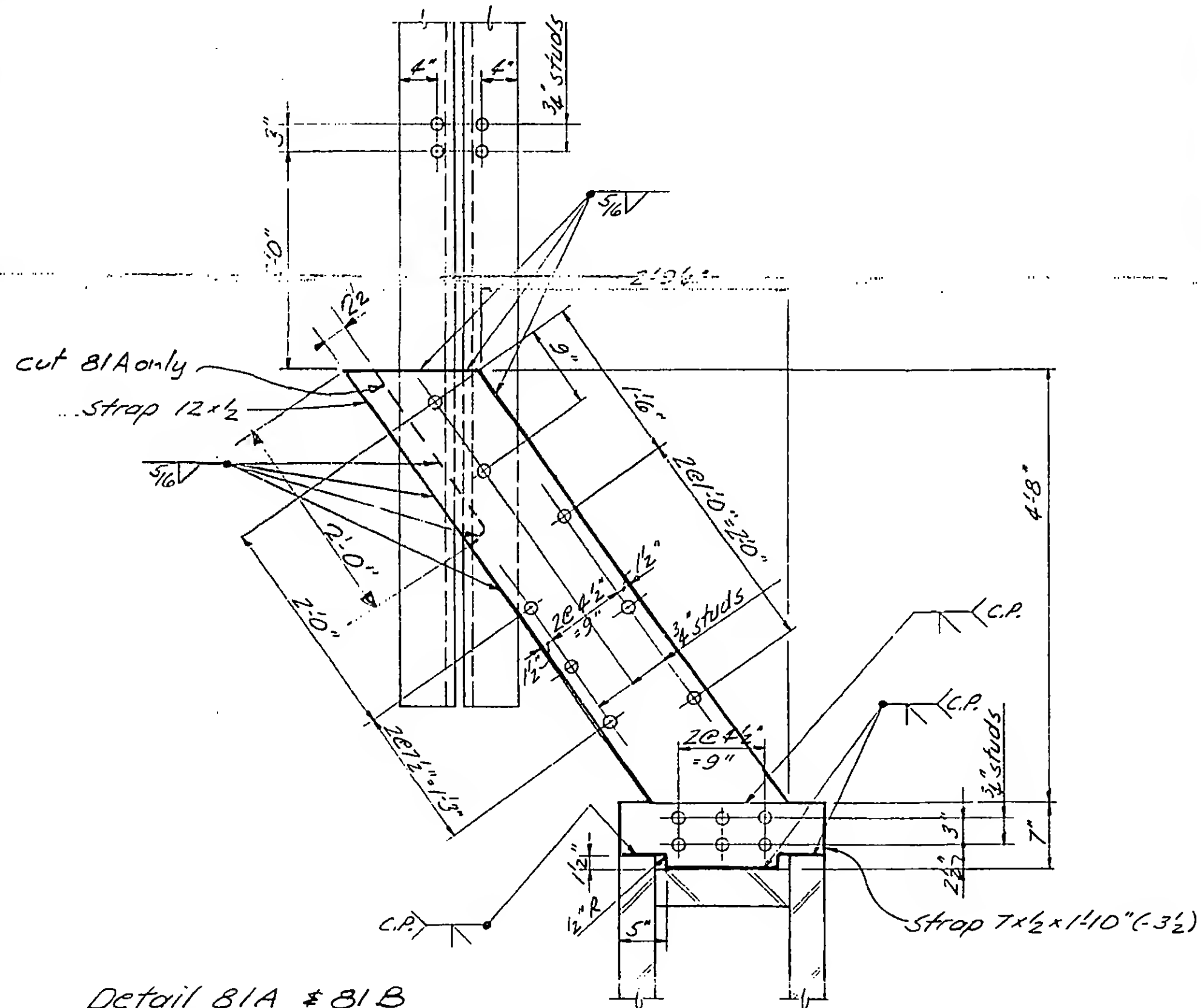
18-AB2-80

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TITLE STRAP ANCHORS - CORE - DETAIL B1

DATE 10-1-69

REVISIONS



Detail 81A & 81B



DE 4-647 D

DRAWN

J. Adams

REVIEWED

18-ABZ-81.1

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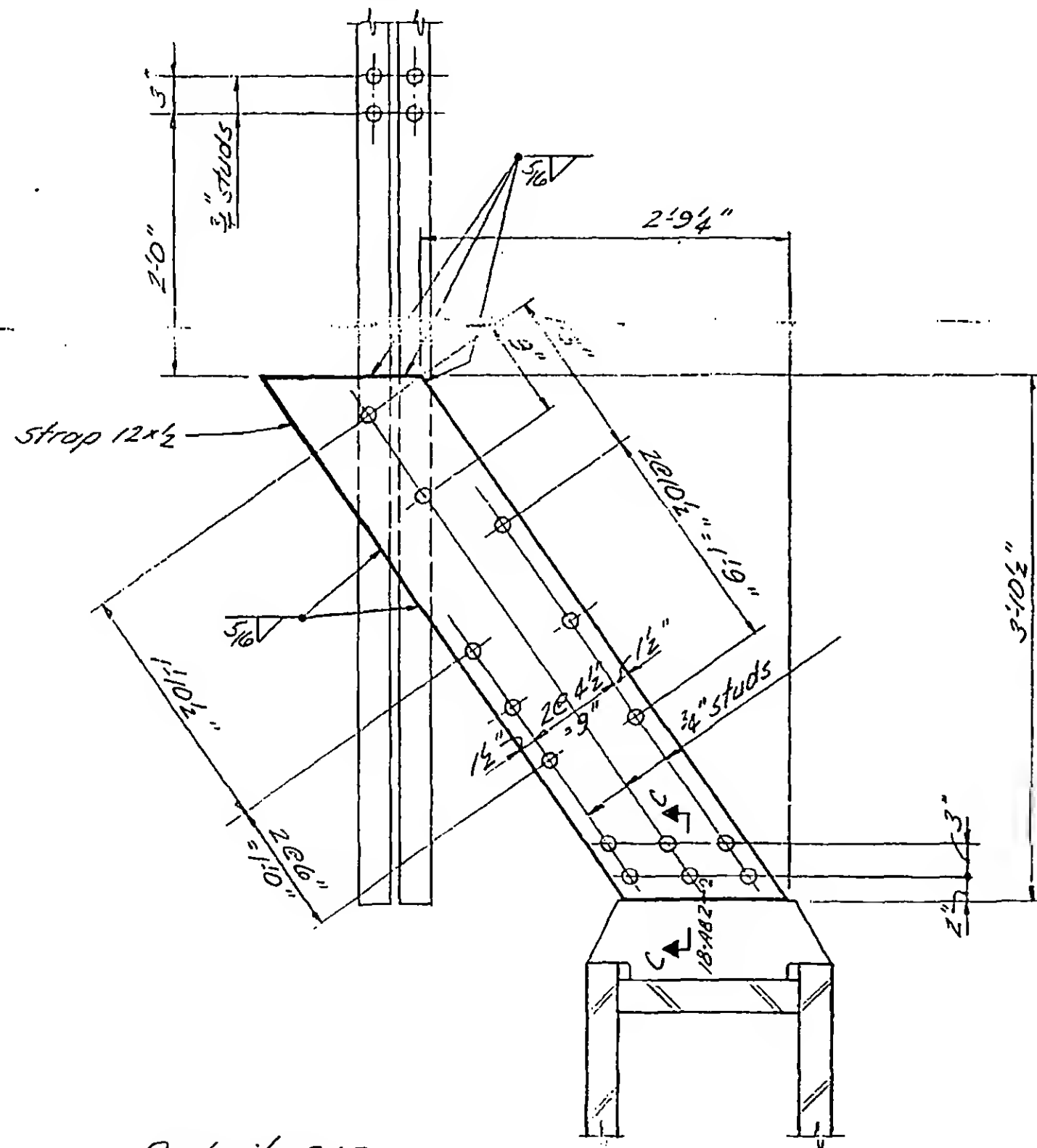
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TITLE STRAP ANCHORS - CORE - DETAIL 81

DATE 10-1-69

REVISIONS



Detail 81C



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DRAWN

J. Adams

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18-AB2-81.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT

THE WORLD TRADE CENTER

TITLE

ANCHOR KEY PLANS - EXTERIOR WALL - INDEX

DATE

11/ 7/69

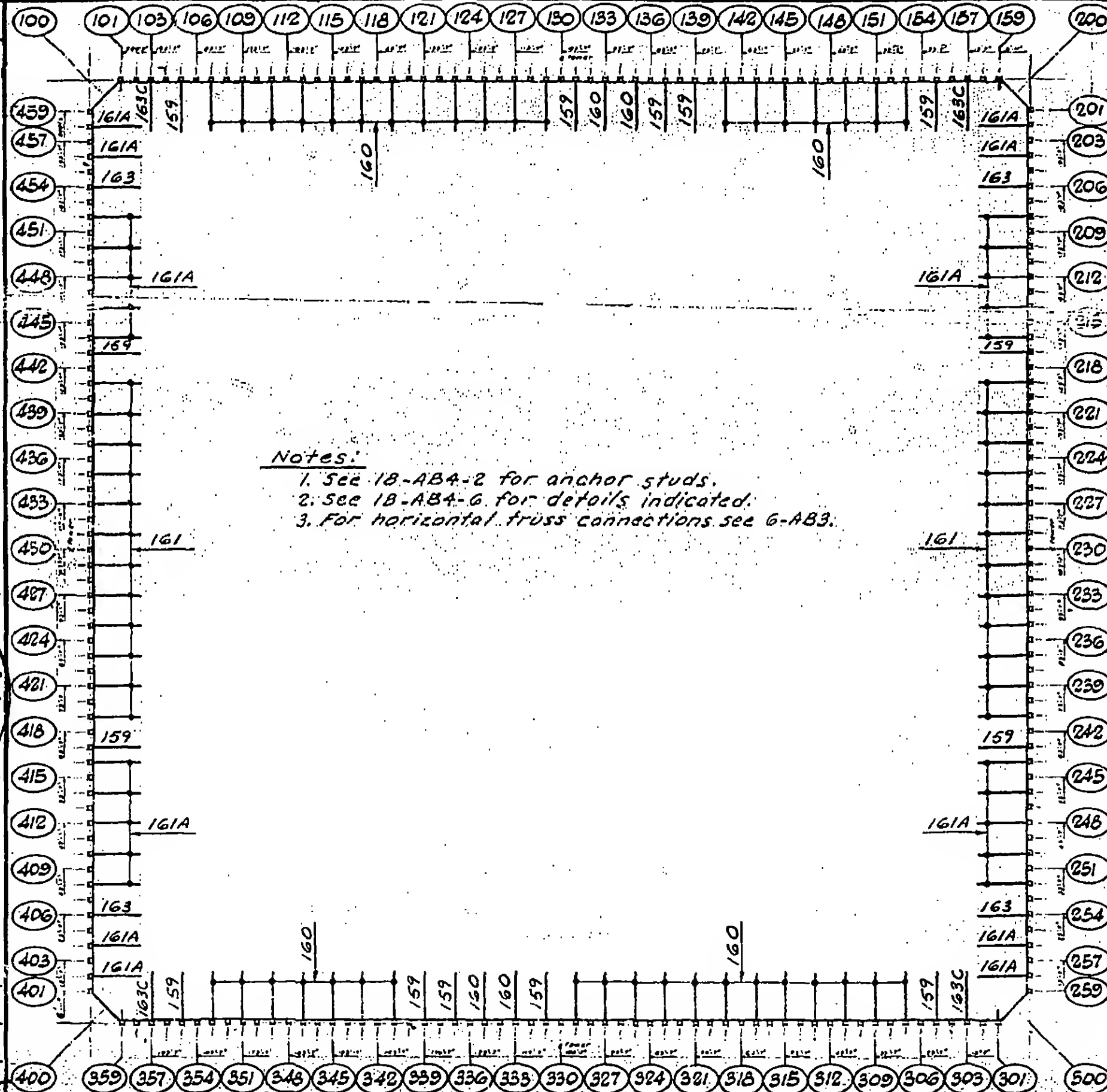
REVISIONS

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18-AB3- 2 FLOOR 7
18-AB3- 3.1 FLOOR 9 TOWER A
18-AB3- 3.2 FLOOR 9 TOWER B
18-AB3- 4.1 FLOORS 10-24, 26-40, 50-58, 60-74, 84-91, 93-106 TOWER A
18-AB3- 4.2 FLOORS 14-24, 26-40, 50-58, 60-74, 84-91, 93-106 TOWER B
18-AB3- 4.3 FLOOR 10 TOWER B
18-AB3- 4.4 FLOOR 11 TOWER B
18-AB3- 4.5 FLOOR 12 TOWER B
18-AB3- 4.6 FLOOR 13 TOWER B
18-AB3- 5 FLOORS 25, 59, 92
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18-AB3- 7.1 FLOOR 43 TOWER A
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18-AB3- 8.1 FLOOR 44 TOWER A
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18-AB3- 9 FLOOR 45
18-AB3-10 FLOORS 46 - 49
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18-AB3-12 FLOOR 78
18-AB3-13 FLOOR 79
18-AB3-14 FLOORS 80 - 83
18-AB3-15 FLOOR 107 HOLD
18-AB3-16 FLOOR 108 HOLD
18-AB3-17 FLOOR 110 HOLD



18-AB3- 1

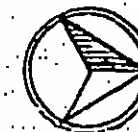
REVISIONS



NORTH



TOWER A



NORTH

TOWER 3

Notes:

1. See 18-AB4-2 for anchor studs.
2. See 18-AB4-6 for details indicated.
3. For horizontal truss connections see 6-AB3.



DESIGNED

J. Korp

DRAW

A. Franqui

● 同位素示踪法

U. Brewer

18-AB3-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

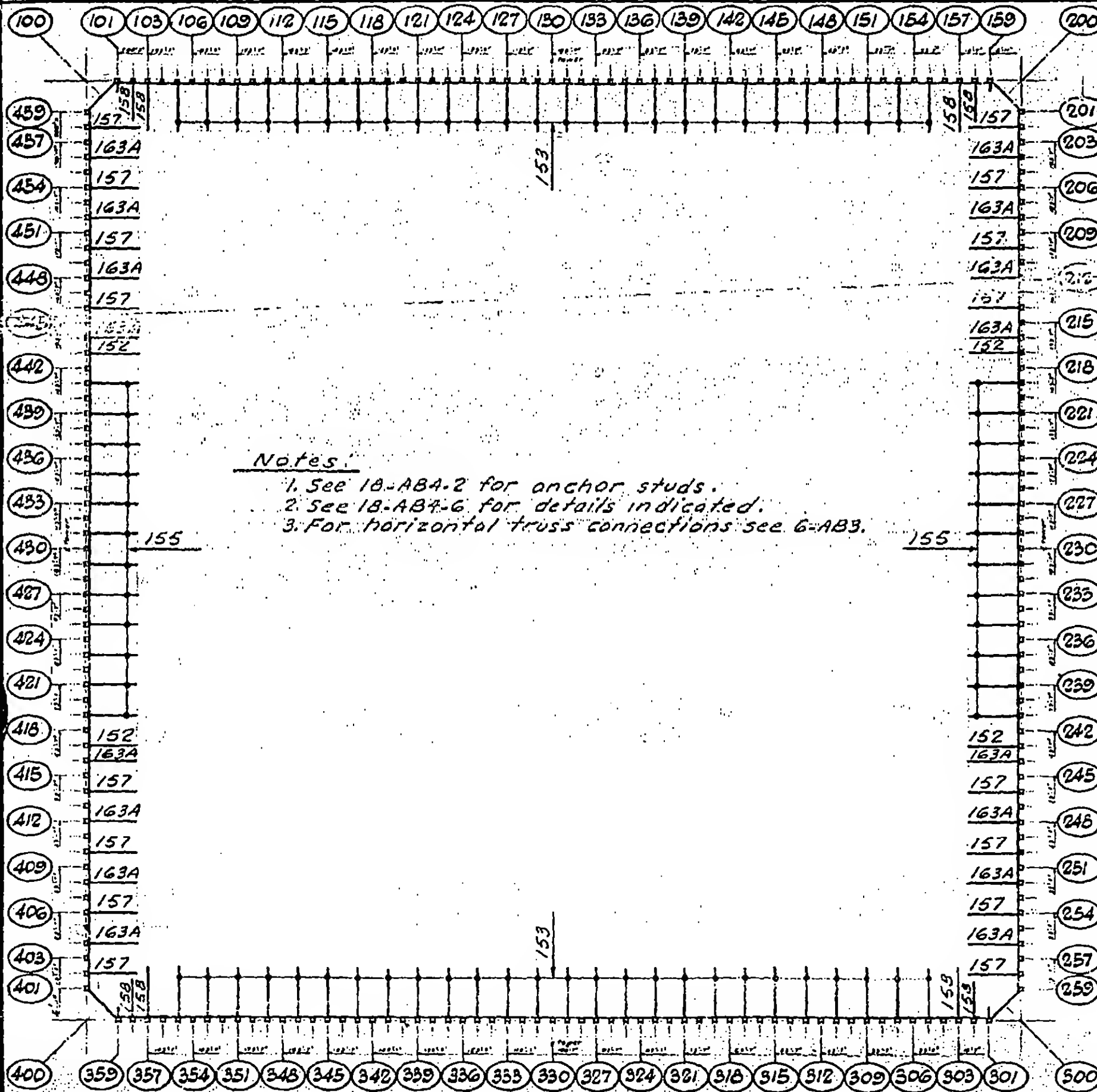
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PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOOR 9 TOWER A

DATE 2-7-69

REVISIONS

Notes:

1. See 18-AB4-2 for anchor studs.
2. See 18-AB4-6 for details indicated.
3. For horizontal truss connections see 6-AB3.

DESIGNED
S. KarpDRAWN
A. FrangulREVIEWED
W. Brewer

18-A3-3.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

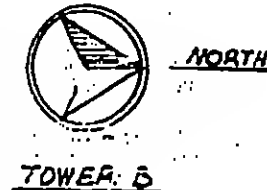
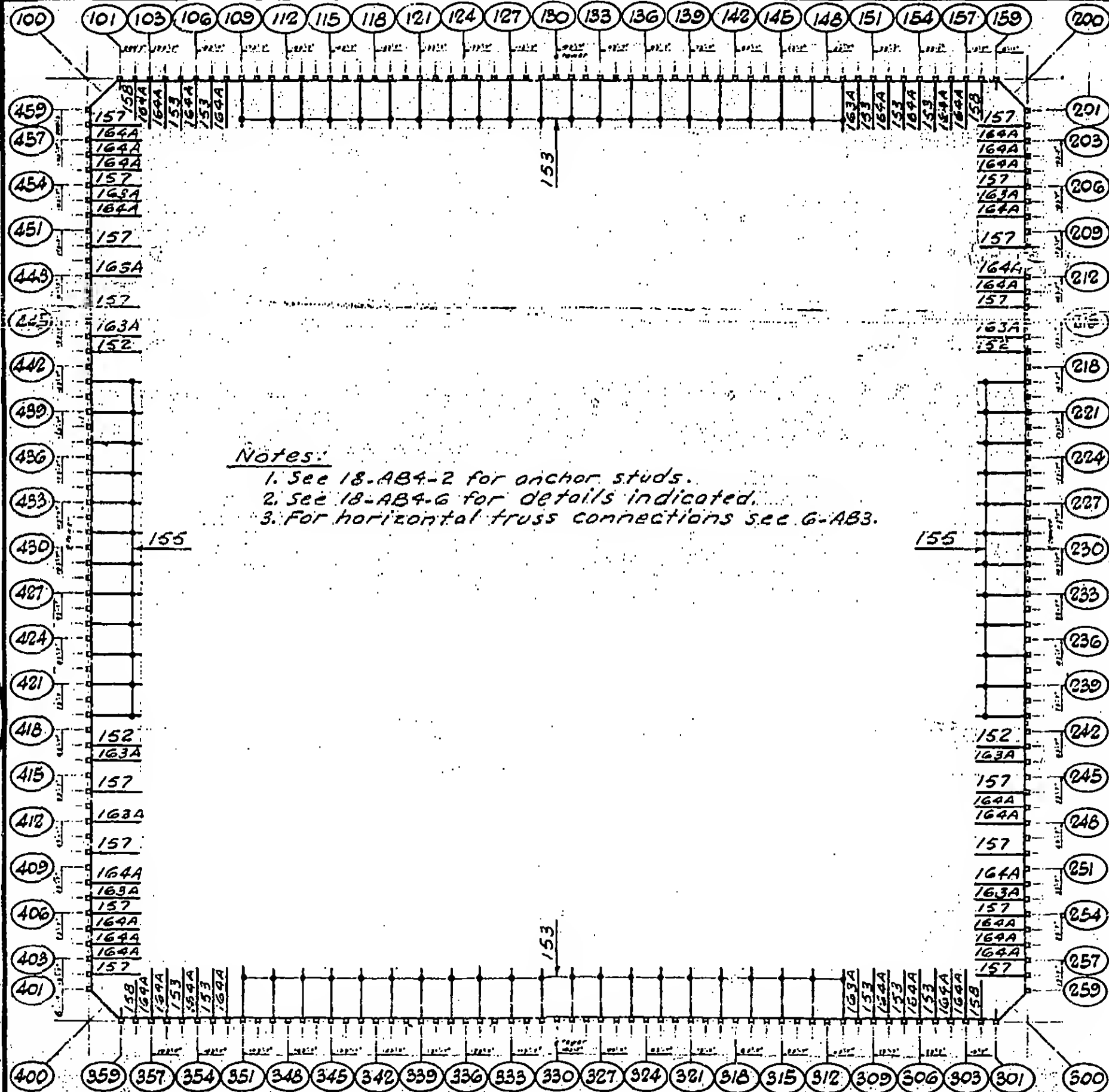
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TITLE ANCHOR PLATE KEY PLAN FLOOR 9, TOWER B

DATE 2-7-69

REVISIONS



DESIGNED

S. Kopp

DRAWN

A. Franqui

REVIEWED

W. B. Brown

18-B3-3.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

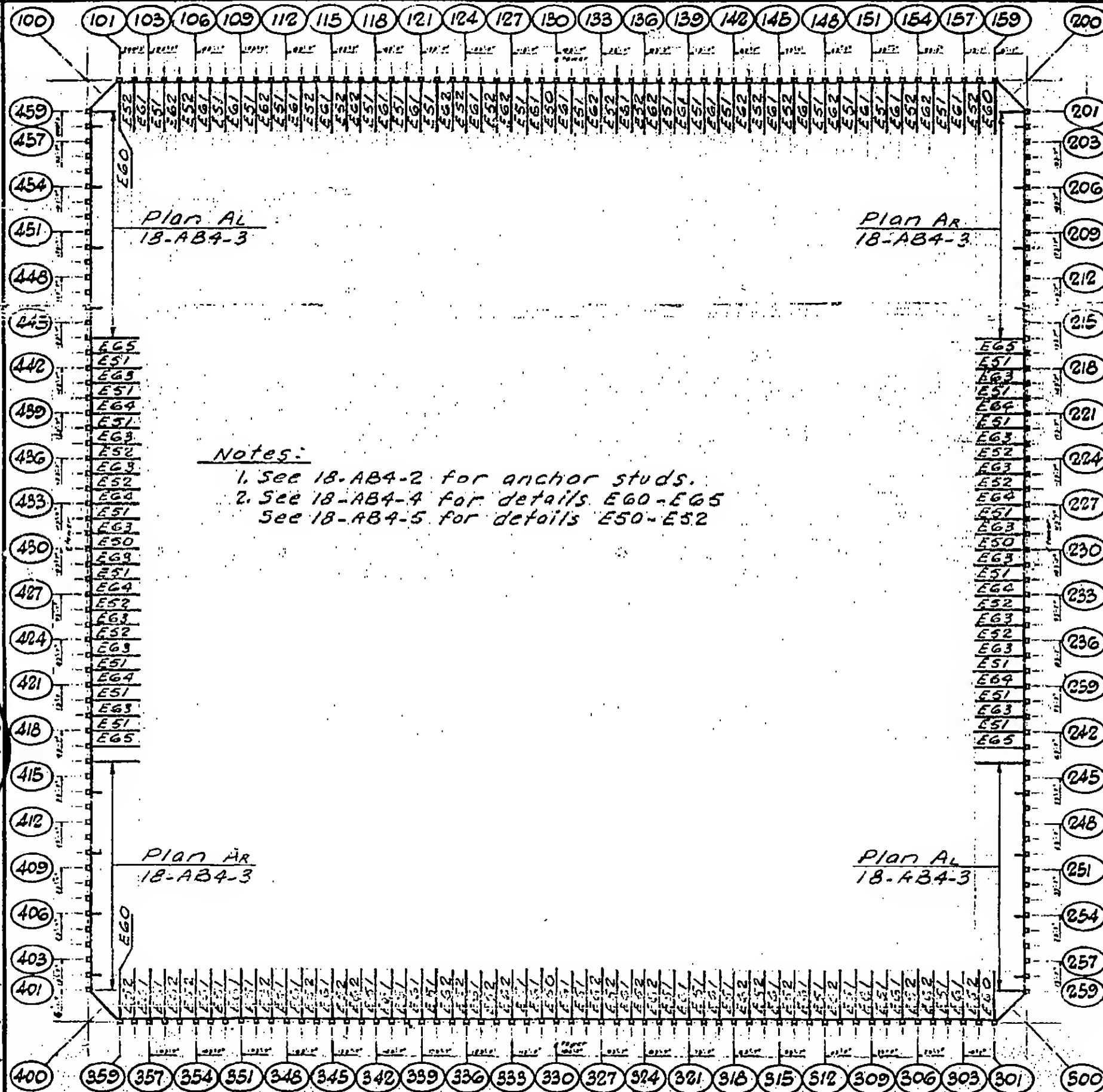
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TITLE ANCHOR PLATE KEY PLAN FLOORS TOWER A (See Table)

DATE 2-7-69

REVISIONS



NORTH



TOWER A

Floors
Included

10-24

25-40

50-58

60-74

84-91

93-106

Notes:

1. See 18-AB4-2 for anchor studs.

2. See 18-AB4-4 for details E60-E65

See 18-AB4-5 for details E50-E52

DESIGNED
S. KarpDRAWN
A. FrangulREVIEWED
W. Brewer

18-A3-4.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

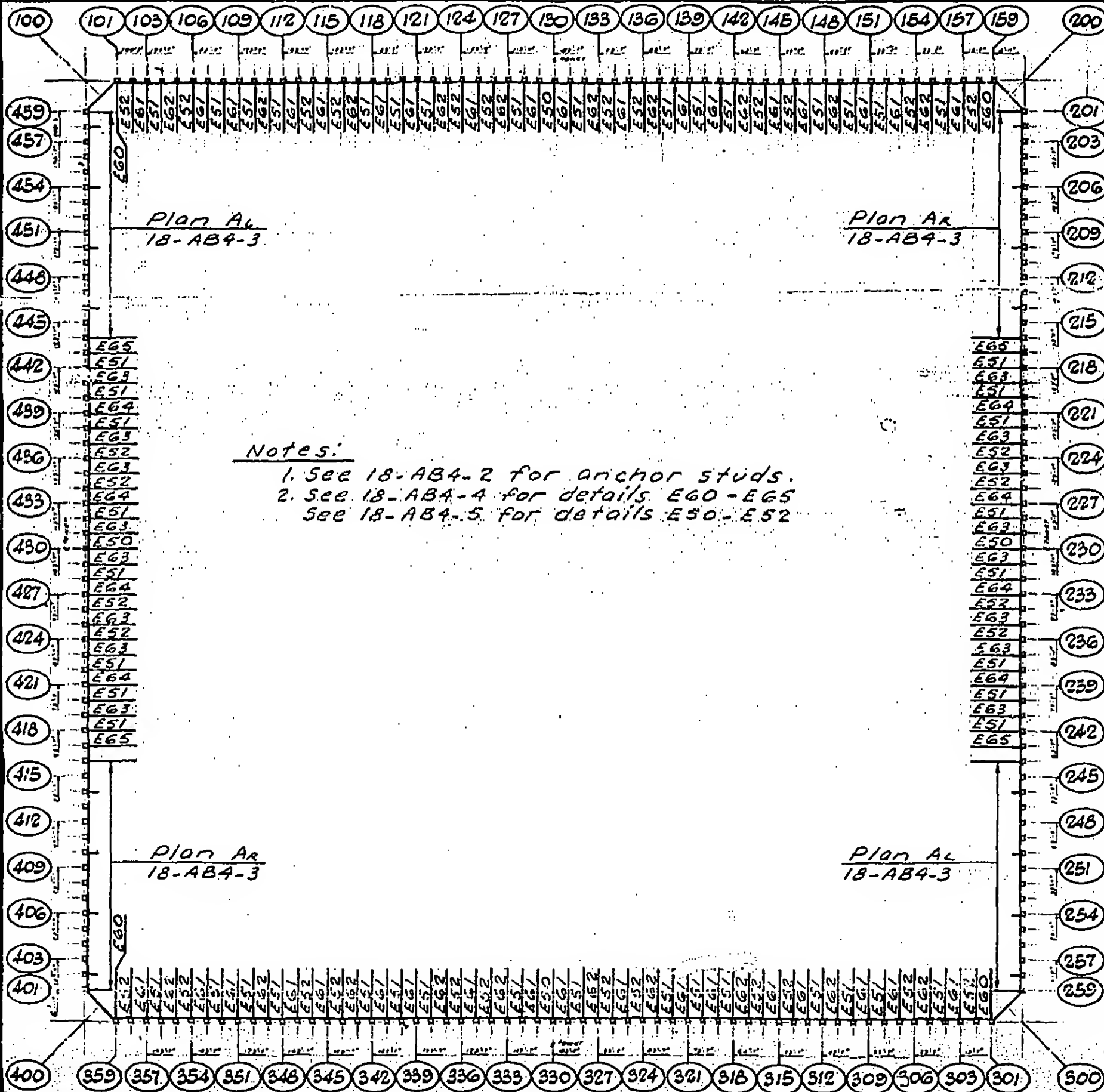
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TITLE ANCHOR PLATE KEY PLAN FLOORS TOWER B (See Table)

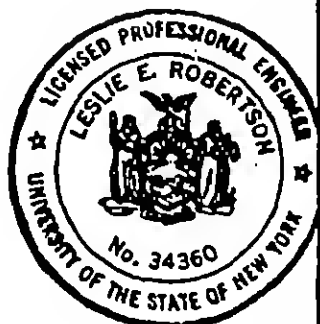
DATE 2-7-69

REVISIONS



TOWER B

| Floors included |
|-----------------|
| 14-24 |
| 26-40 |
| 50-58 |
| 60-74 |
| 84-91 |
| 93-106 |

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S. KargoDRAWN
A. F. HowerREVIEWED
W. E. Hower

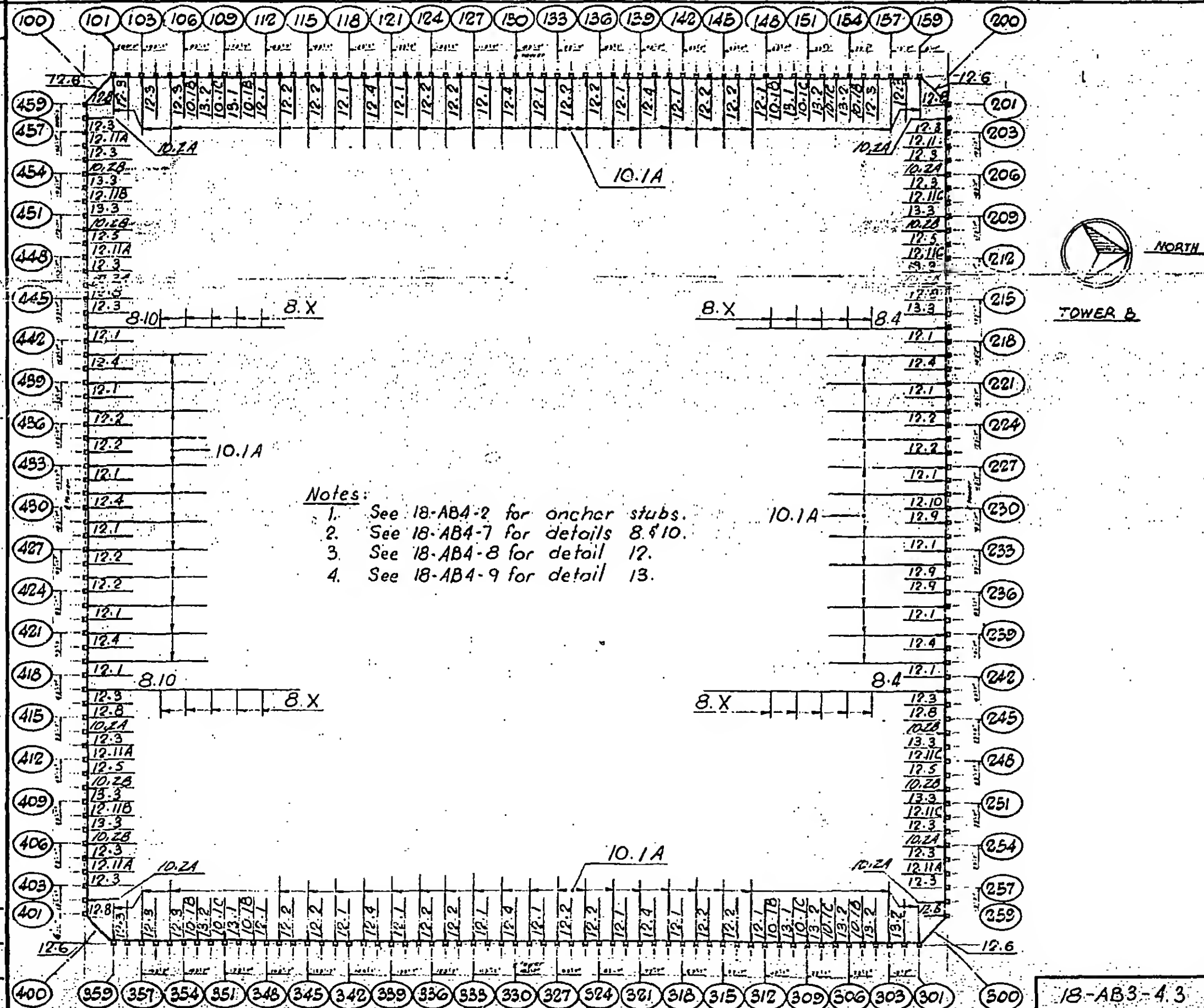
18-B3-4.2

PROJECT: THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN 10TH FLOOR TOWER B

DATE 11-7-69

REVISIONS



Notes:

1. See 18-AB4-2 for anchor stubs.
2. See 18-AB4-7 for details 8 & 10.
3. See 18-AB4-8 for detail 12.
4. See 18-AB4-9 for detail 13.

DESIGNED

DRAWN

T Terrelonge

同場刊載作品

18-AB3-4.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

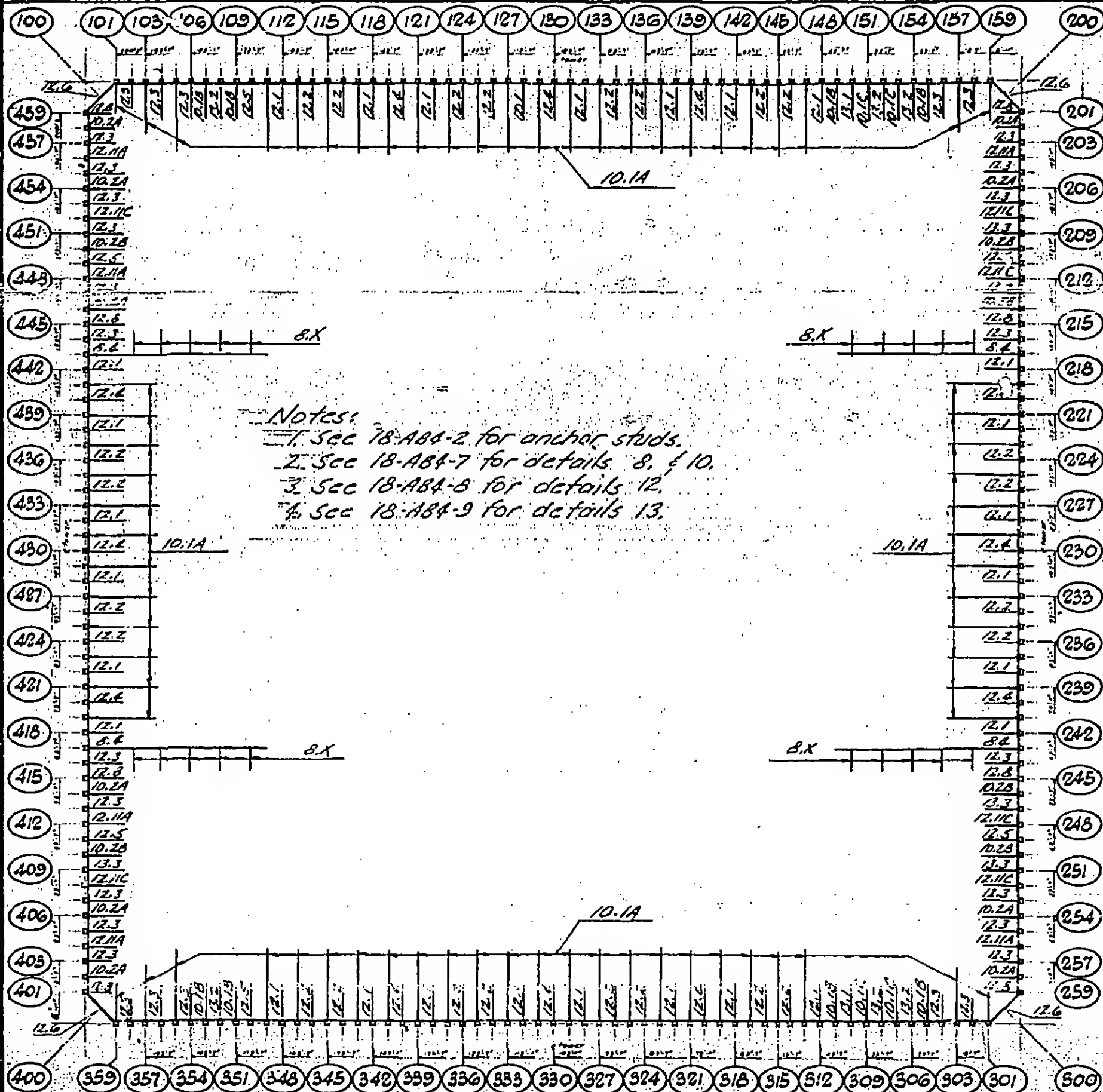
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TITLE ANCHOR PLATE KEY PLAN 11TH FLOOR TOWER B

DATE 11-7-69

REVISIONS



Notes:

1. See 18-AB4-2 for anchor studs.
2. See 18-AB4-7 for details 8, & 10.
3. See 18-AB4-8 for details 12.
4. See 18-AB4-9 for details 13.

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DRAWN

REVIEWED

18-AB3-4.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

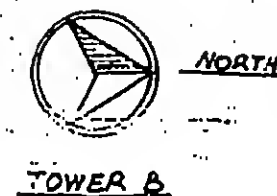
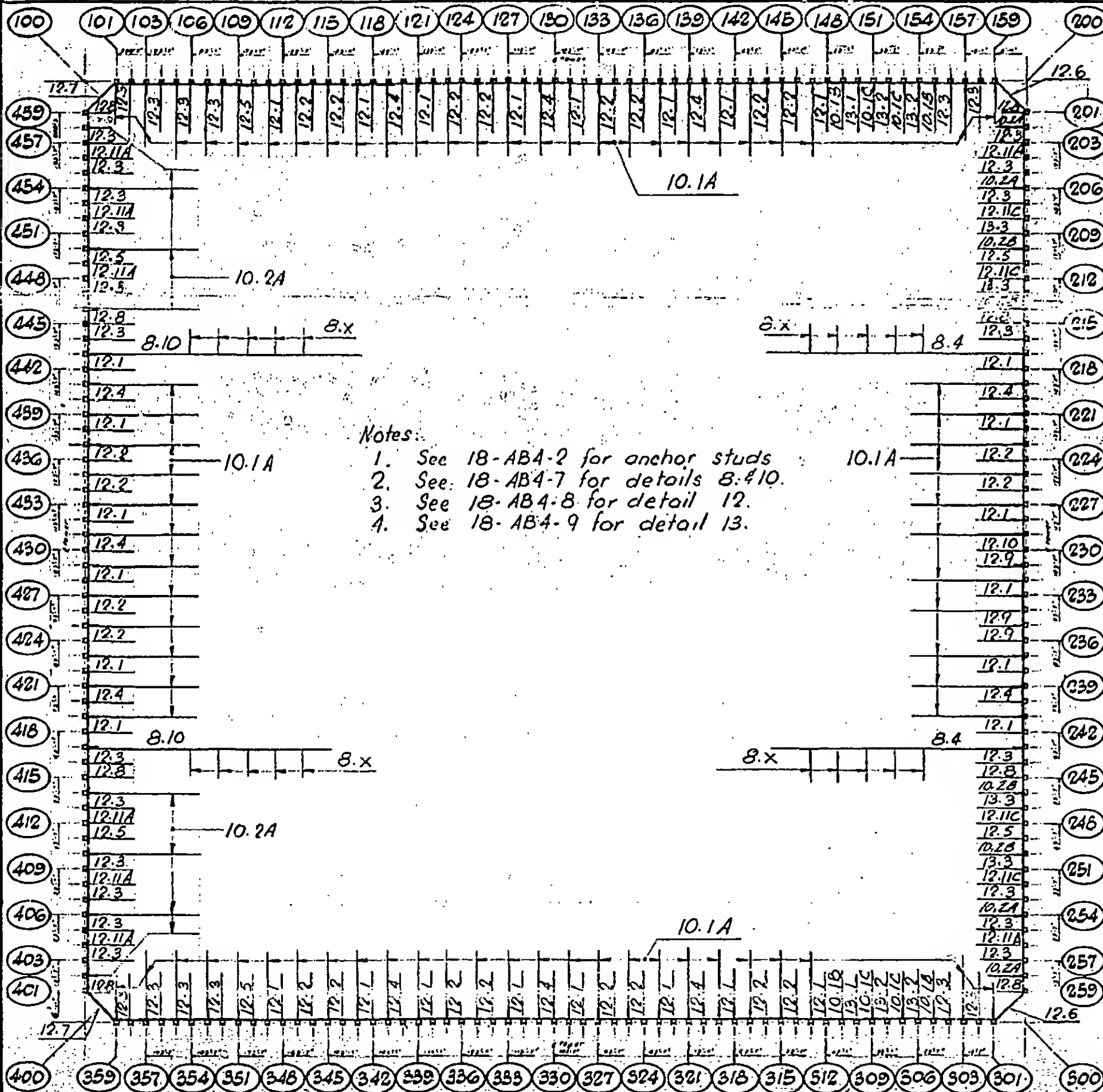
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TITLE ANCHOR PLATE KEY PLAN 12TH FLOOR TOWER B

DATE 11-7-69

REVISIONS



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DRAWN

T. Terrelonge

REVIEWED

18-AB3-4.5

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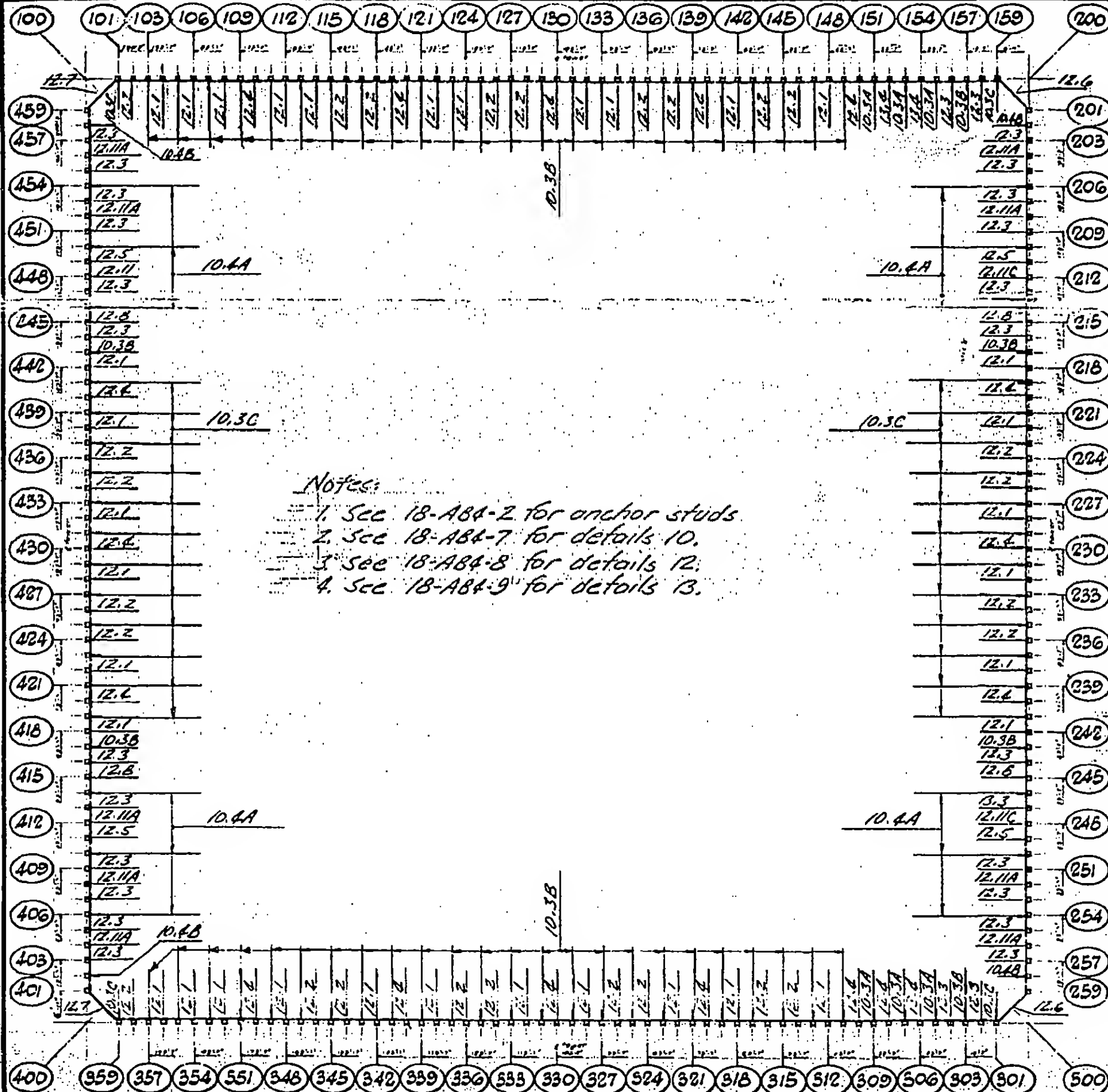
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TITLE ANCHOR PLATE KEY PLAN 13TH FLOOR TOWER B

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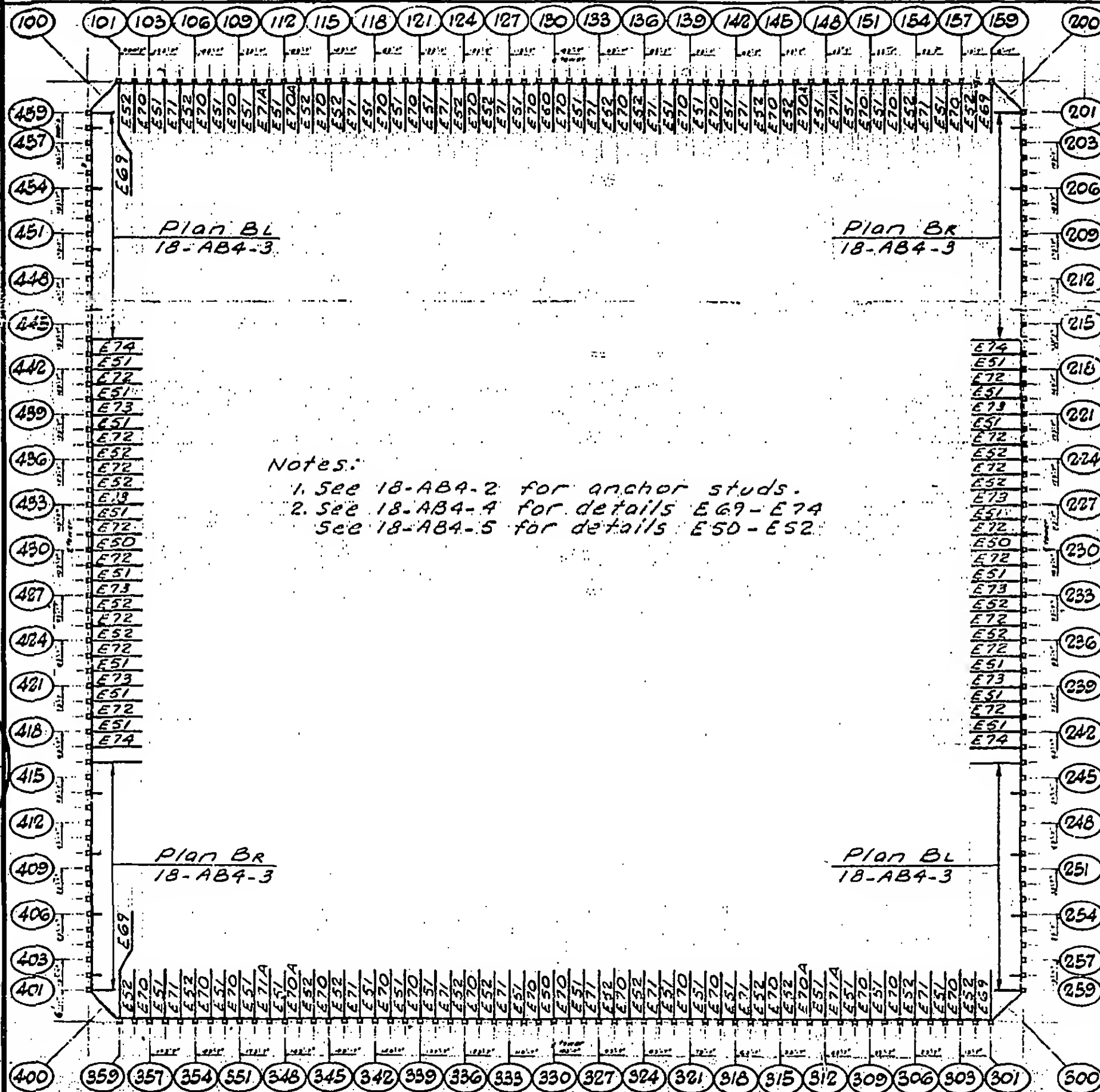
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TITLE ANCHOR PLATE KEY PLAN FLOORS 25, 59, 92

DATE 2-7-69

REVISIONS



NORTH



TOWER A



NORTH

TOWER B



DESIGNED

S. Karp

DRAWN

A. Franqui

REVIEWED

W. Brewer

18-AB3-5

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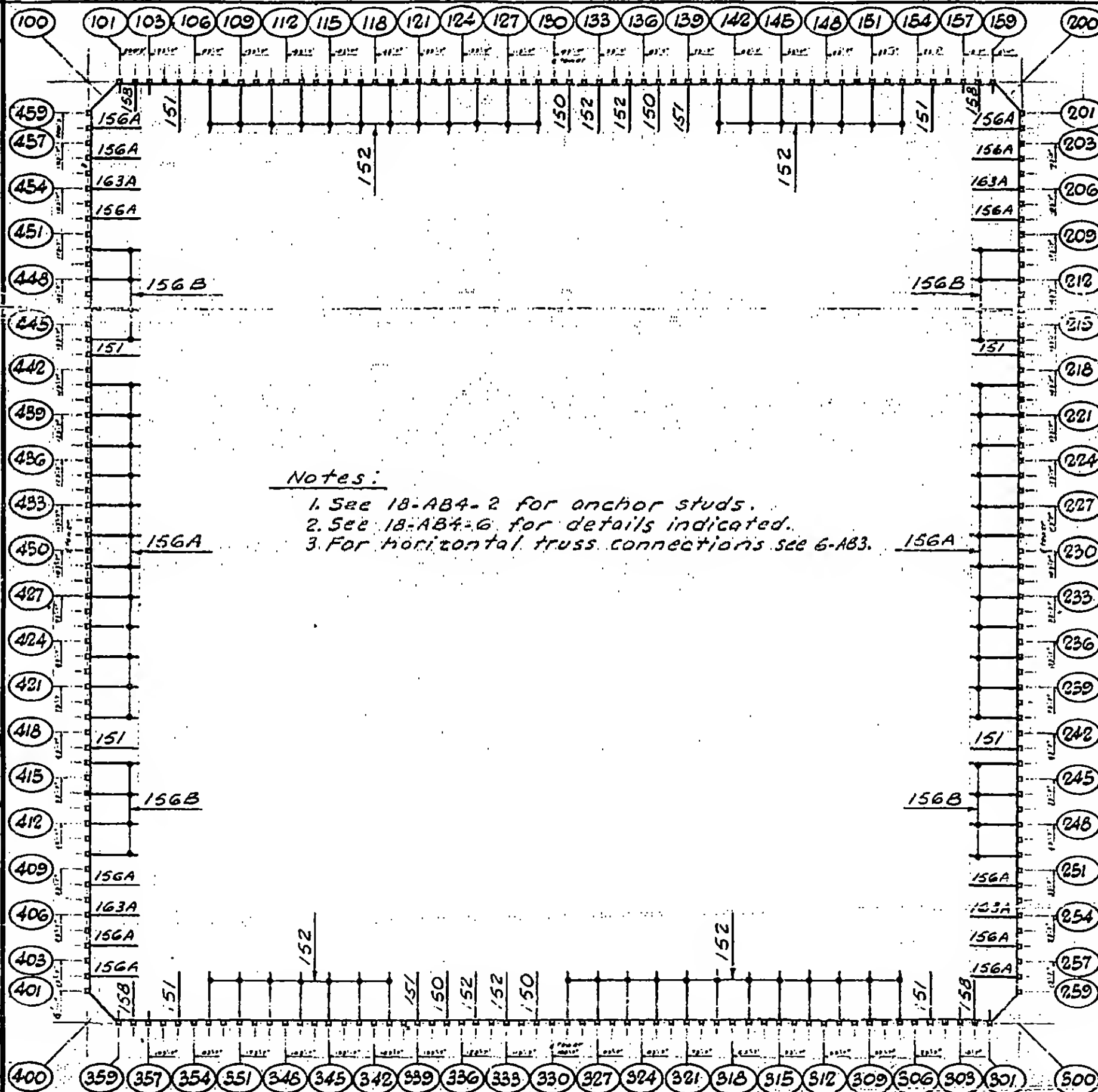
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TITLE ANCHOR PLATE KEY PLAN FLOORS 41, 75

DATE 2-7-69

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J. KarpDRAWN
A. FrangulREVIEWED
W. Brewer

18-AB3-G

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

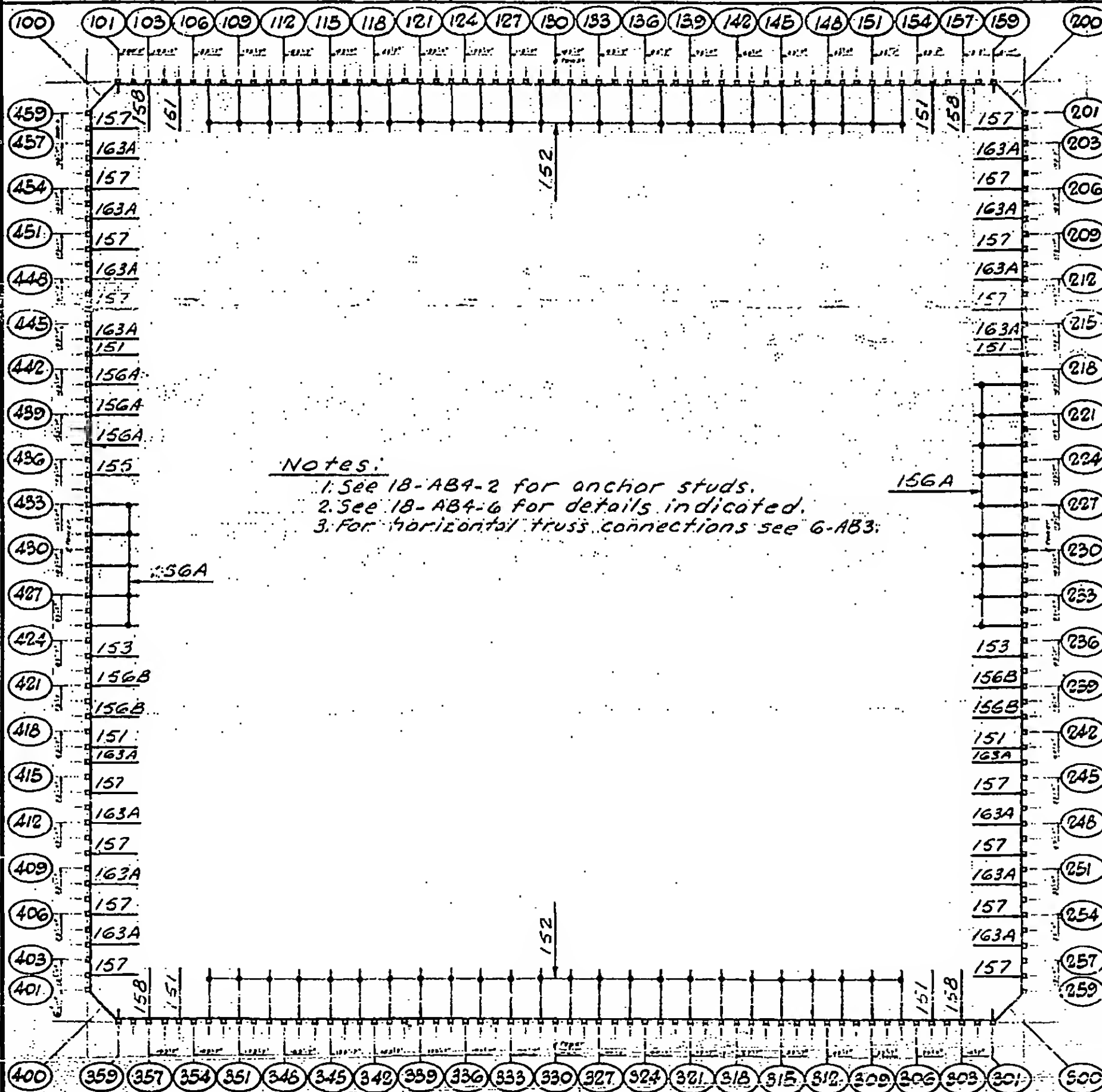
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TITLE ANCHOR PLATE KEY PLAN FLOOR 43 TOWER A

DATE 2-7-69

REVISIONS



NORTH



TOWER A



DESIGNED

S. Korp

DRAWN

A. Fronqui

REVIEWED

W. Brewer

18-A3-7.1

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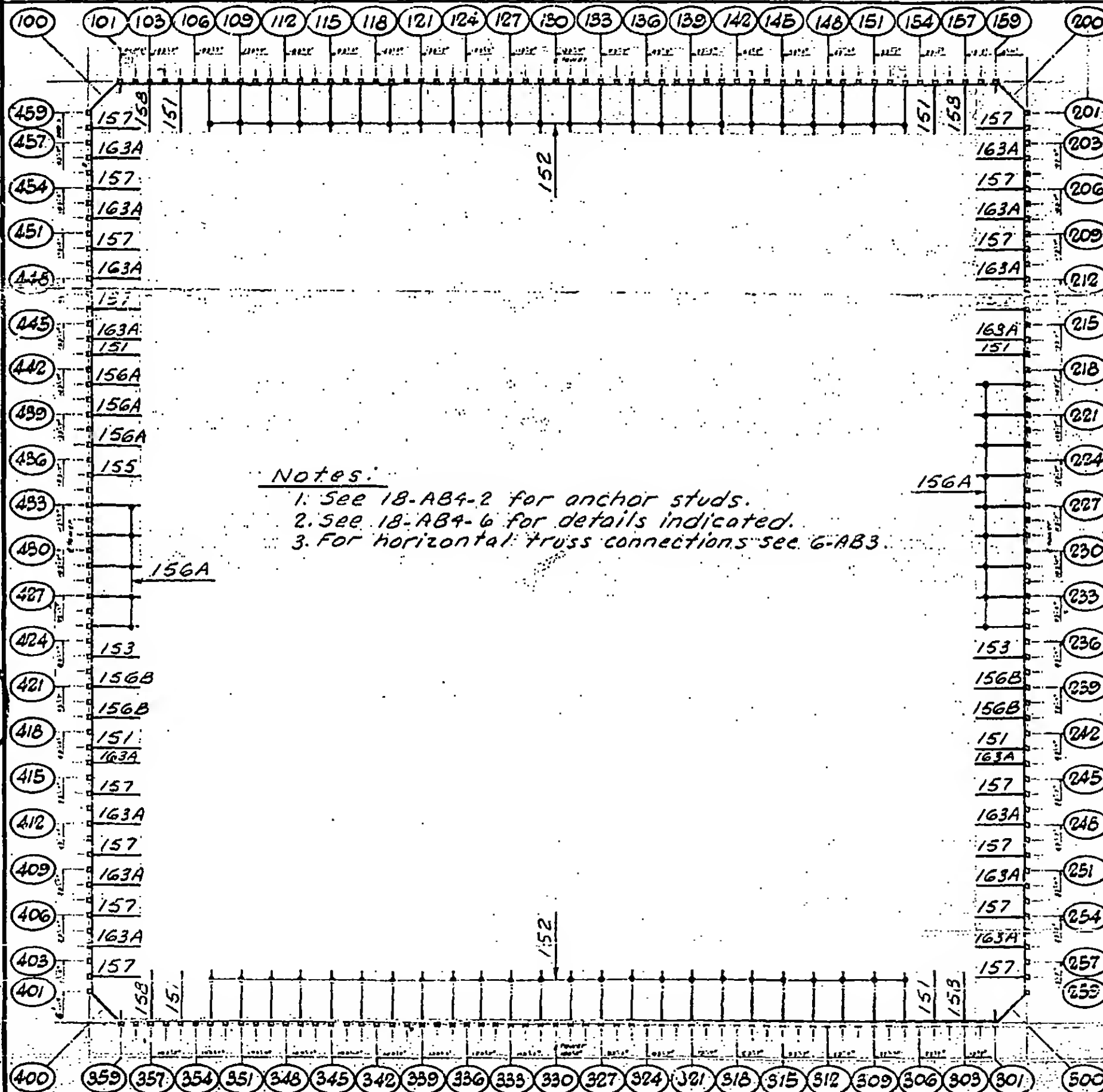
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TITLE ANCHOR PLATE KEY PLAN FLOOR 43 TOWER B

DATE 2-7-69

REVISIONS

DESIGNED
S. KoppDRAWN
A. FranquiREVIEWED
D. B. Brown

18-B3-7.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

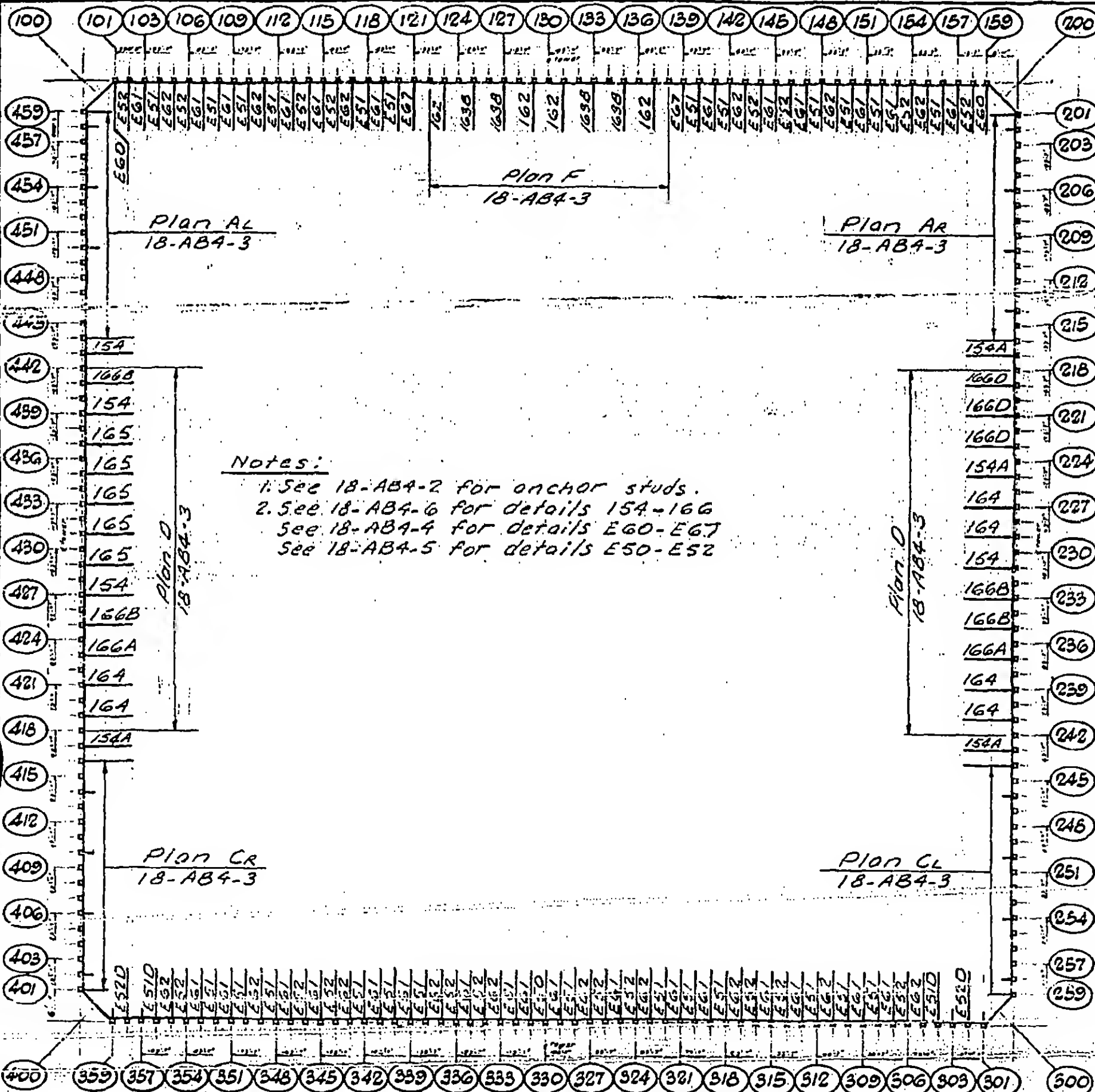
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOOR 44 TOWER A

DATE 2-7-69

REVISIONS



DESIGNED

S. Kopp

DRAWN

A. Frangul

REVIEWED

(1) Brewer

18-A3-B.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

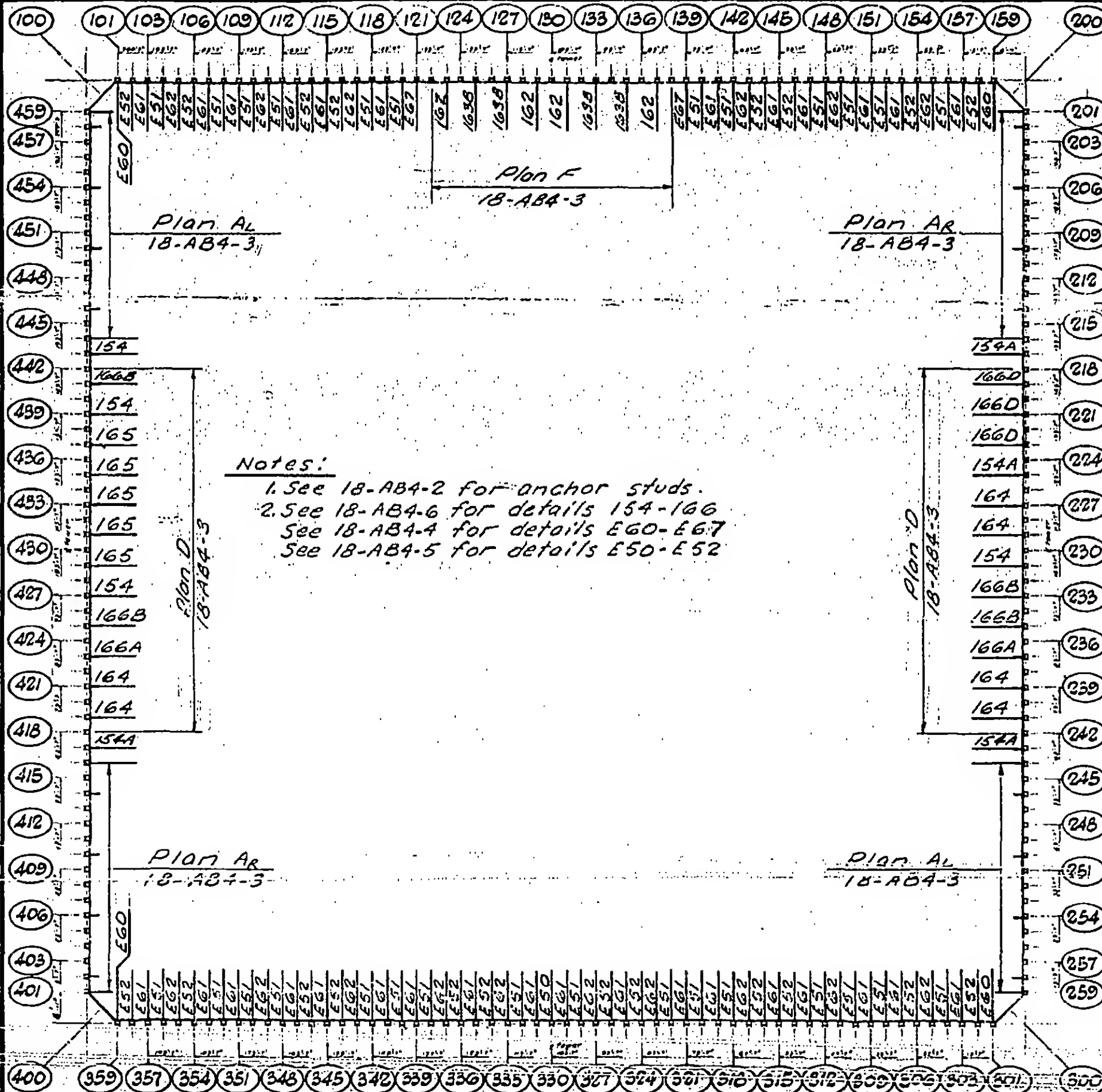
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOOR 44 TOWER B

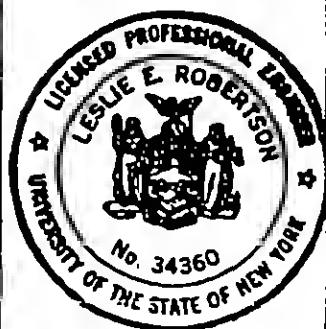
DATE 2-7-69

REVISIONS



Notes:

1. See 18-AB4-2 for anchor studs.
 2. See 18-AB4-6 for details 154-166.
- See 18-AB4-4 for details E60-E67
See 18-AB4-5 for details E50-E52



DESIGNED

S. Karp

DRAWN

A. Franqui

REVIEWED

W. Brewer

18-AB4-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

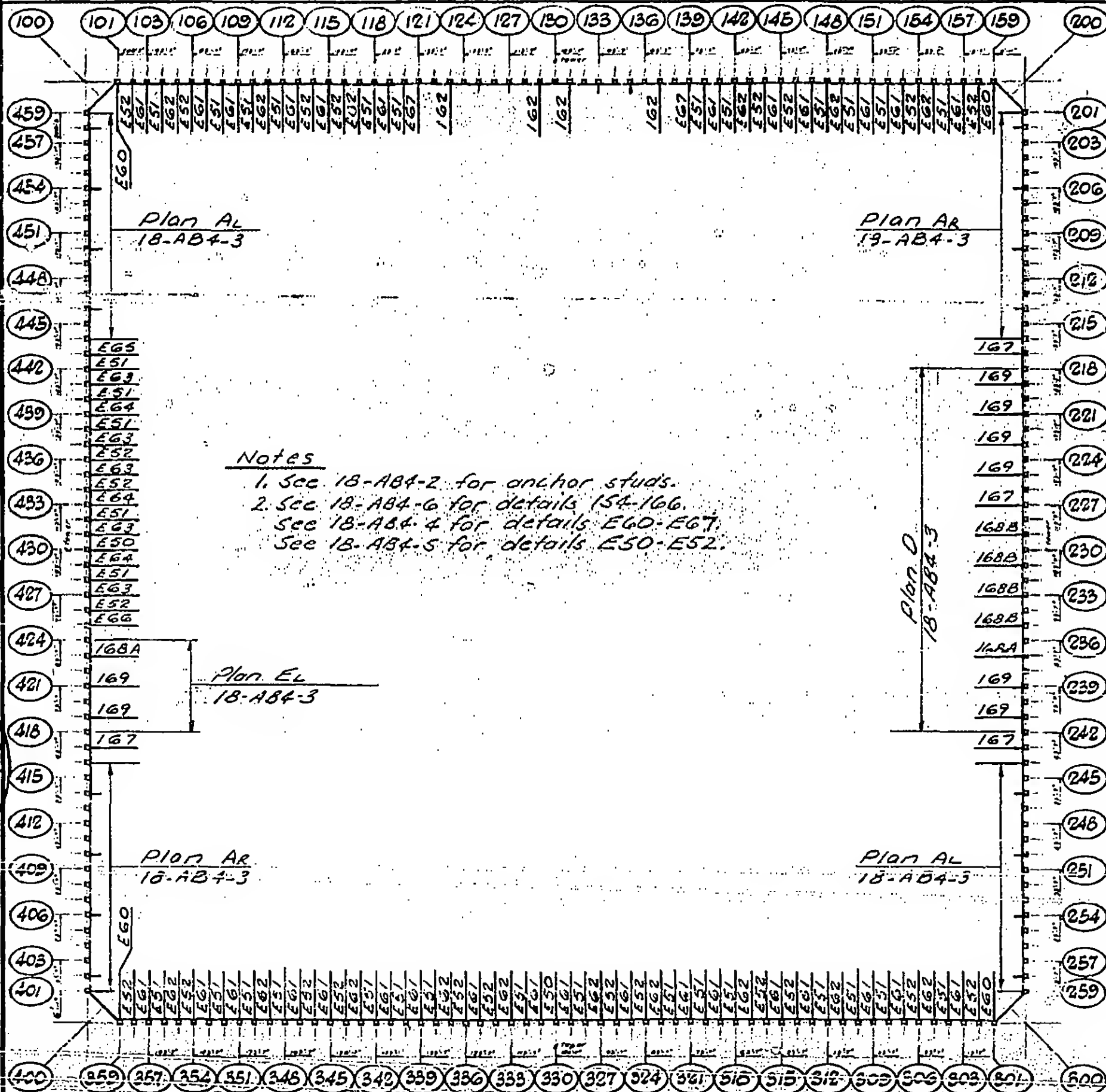
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOOR 45

DATE 2-7-69

REVISIONS



Notes

1. See 18-AB4-2 for anchor studs.
2. See 18-AB4-6 for details 154-166.
- See 18-AB4-4 for details E60-E67.
- See 18-AB4-5 for details E50-E52.



DESIGNED

S. Karp

DRAWN

A. Garguilo

REVIEWED

W. E. Brown

18-AB3-9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

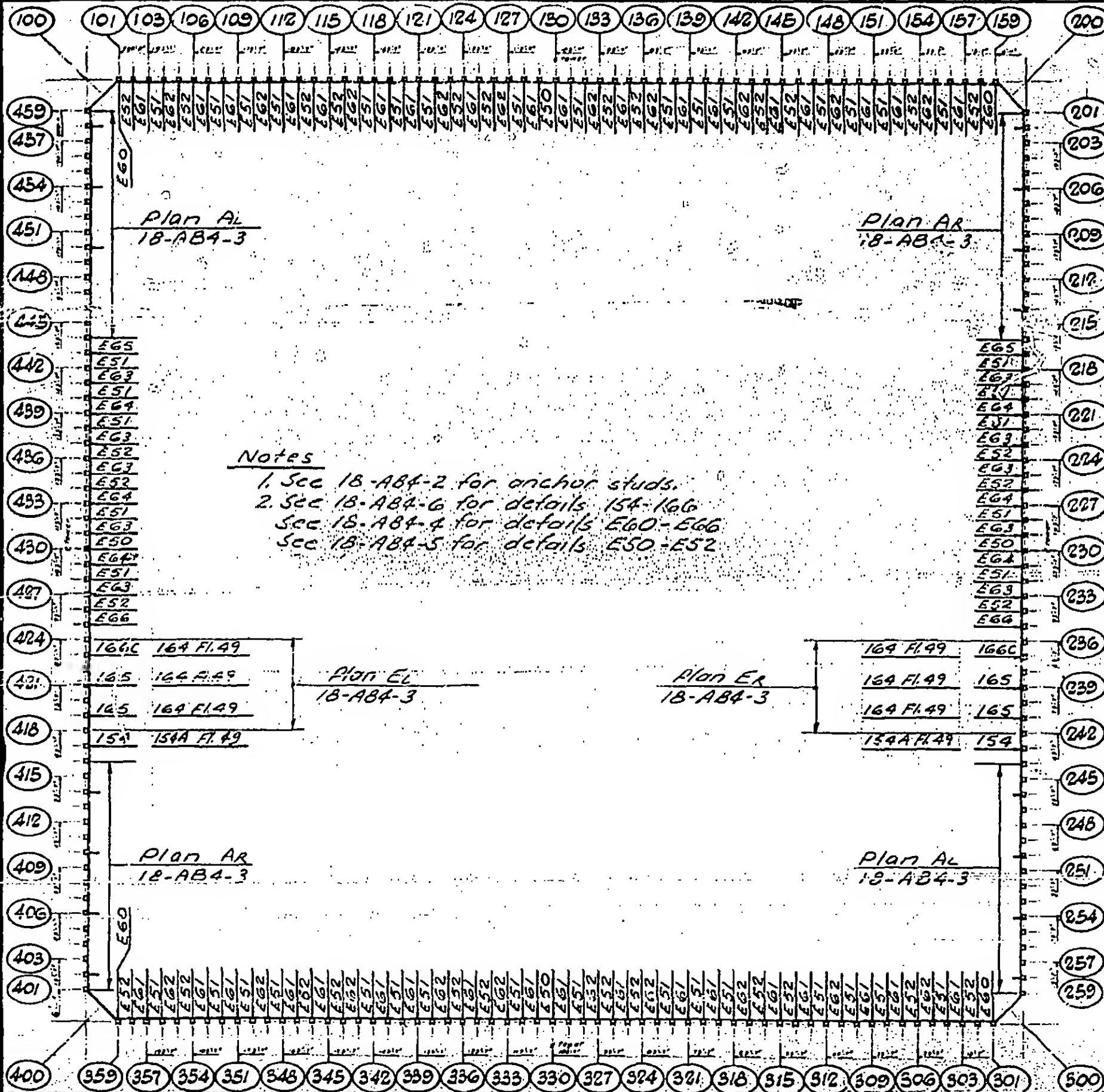
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOORS 46-49

DATE 2-7-69

REVISIONS



NORTH



TOWER A

NORTH



TOWER B



DESIGNED

J. Rupp

DRAWN

A. Franqui

REVIEWED

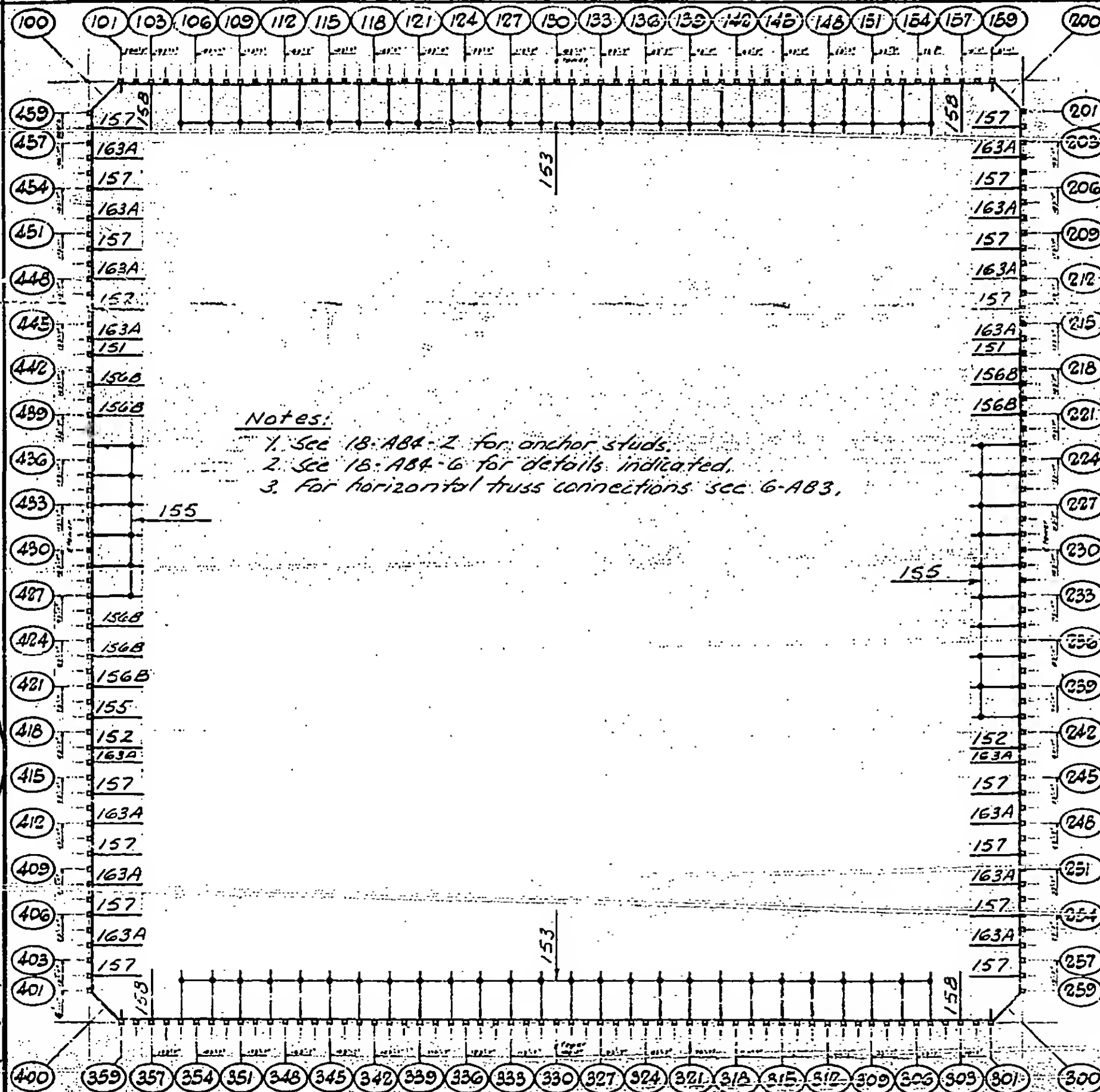
W. Brewer

Structural & Civil Engineers

TITLE ANCHOR PLATE KEY PLAN FLOOR 77

DATE 2-7-69

REVISIONS



NORTH



TOWER A



NORTH

TOWER B

Notes:

1. See 18-AB4-2 for anchor studs.
2. See 18-AB4-6 for details indicated.
3. For horizontal truss connections see 6-AB3.



DESIGNED

S. Karp

DRAWN

A. Franqui

REVIEWED

W. Brewster

16-AB3-11

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

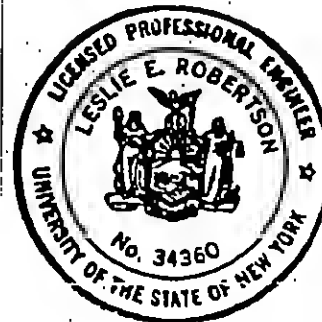
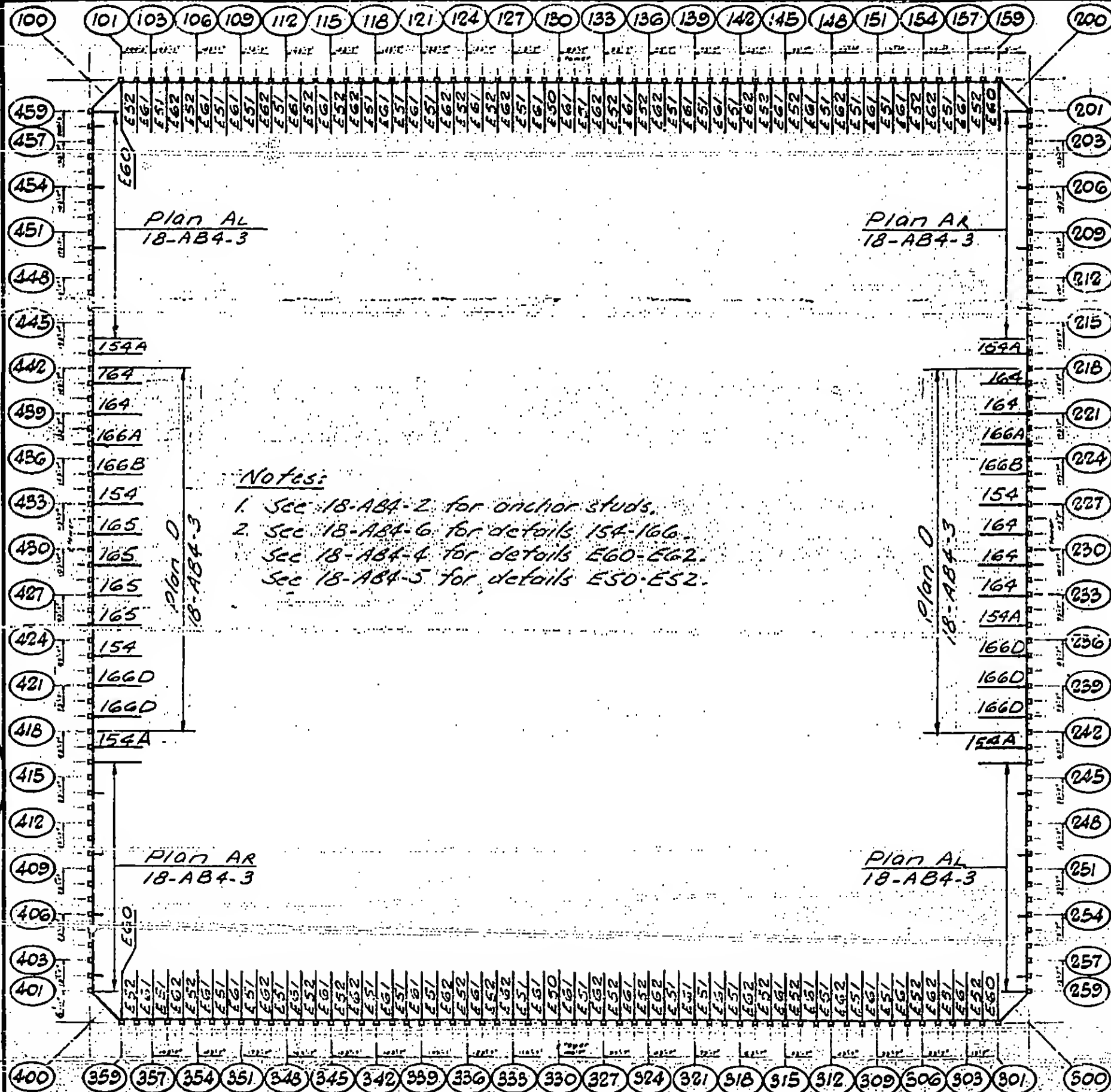
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOOR 78

DATE 2-7-69

REVISIONS

DESIGNED
S. KarpDRAWN
A. FrangulREVIEWED
W. Brewer

18-AB3-12

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

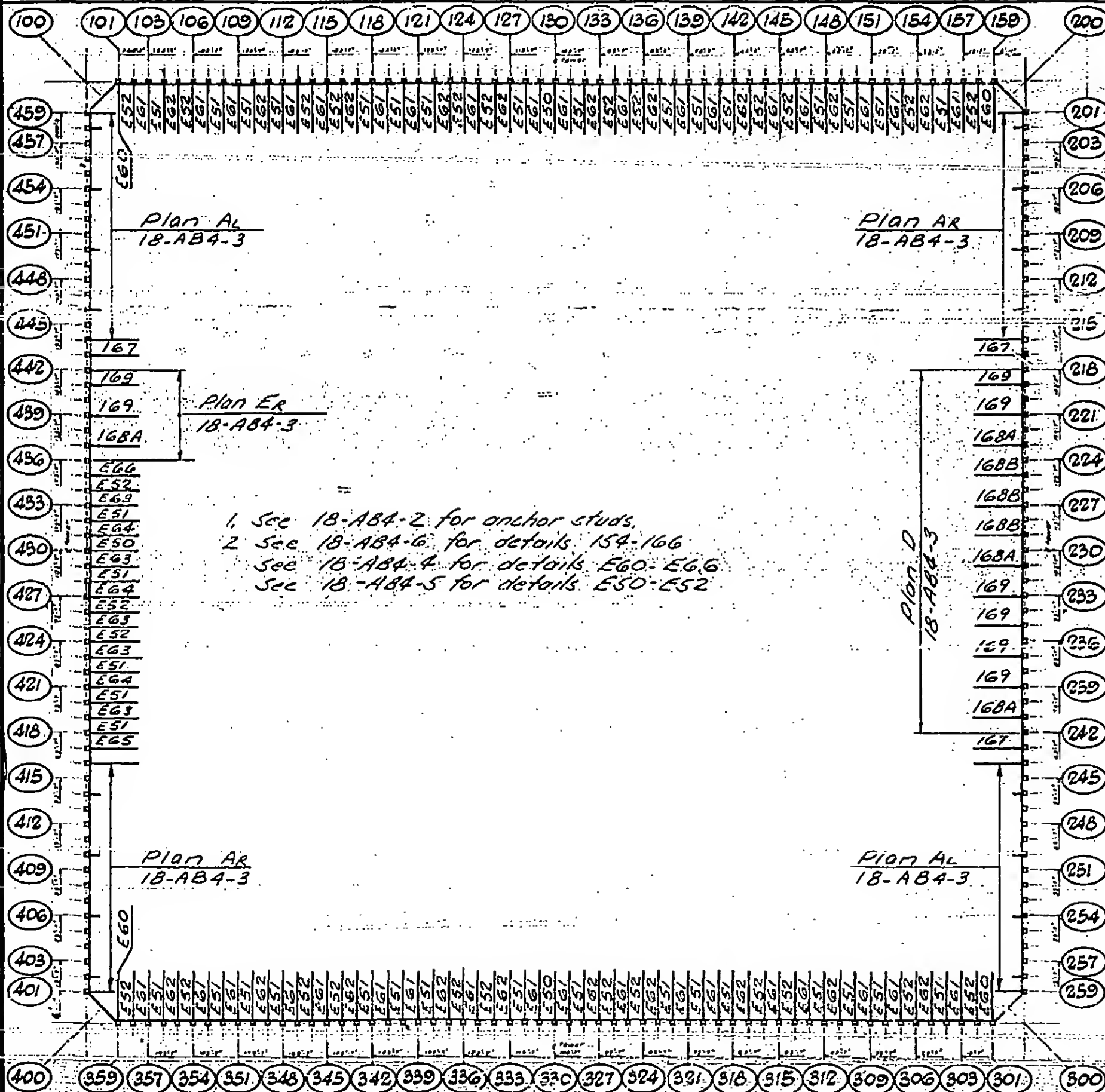
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOOR 79

DATE 2-7-69

REVISIONS



NORTH



TOWER A



NORTH

TOWER B

DESIGNED
S. KaipDRAWN
A. FranquiREVIEWED
W. Brewer

18-AB3-13

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

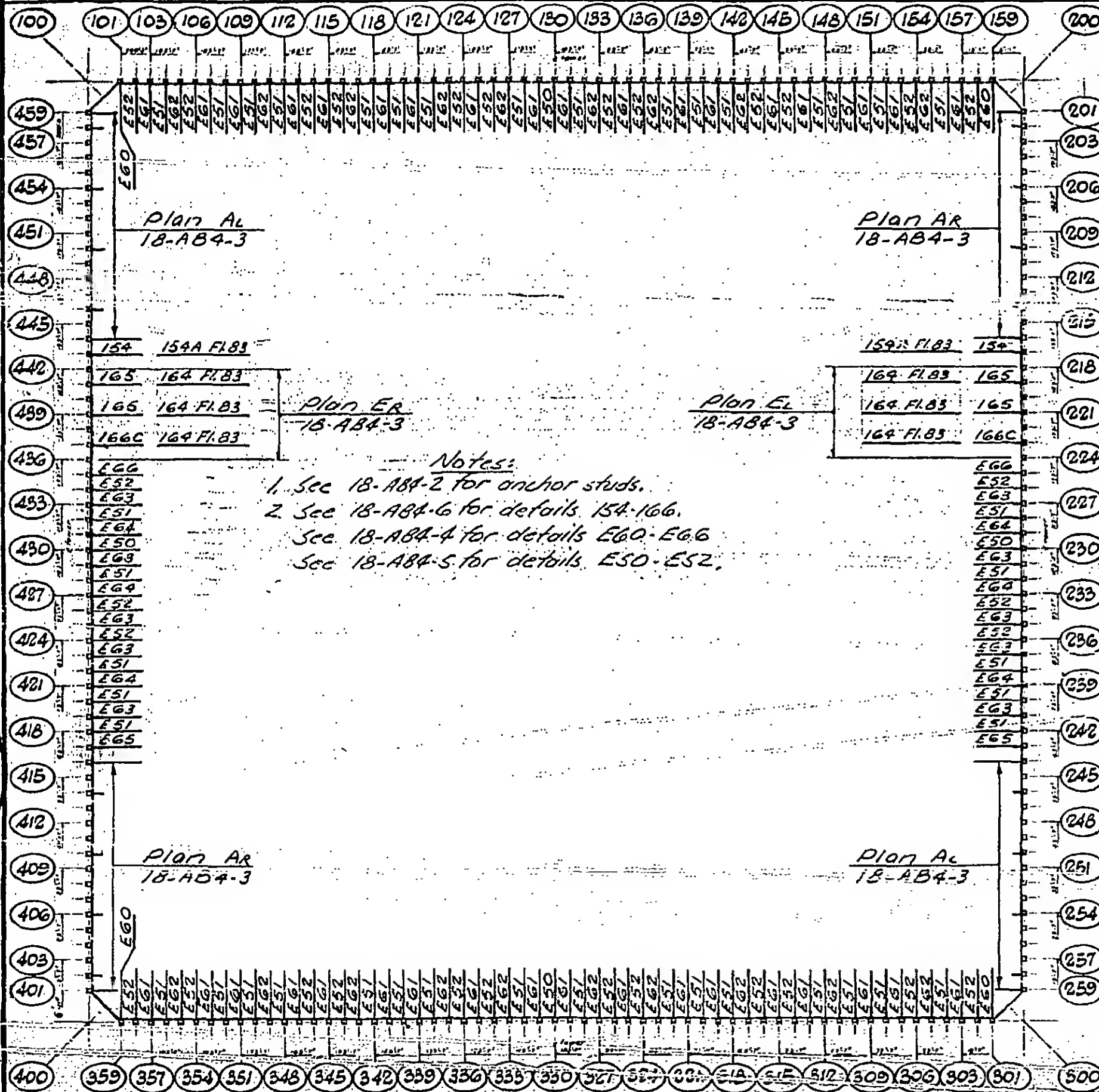
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR PLATE KEY PLAN FLOORS 80-83

DATE 2-7-69

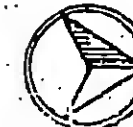
REVISIONS



NORTH



TOWER A



TOWER B

NORTH

DESIGNED
S. KarpDRAWN
A. KarpREVIEWED
U. Brewer

18-AB3-14

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

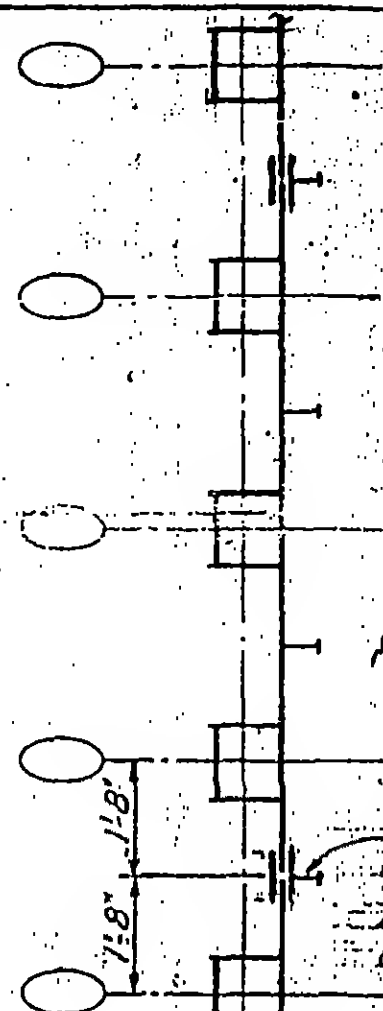
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR DETAILS AT EXTERIOR WALL

DATE 2-7-67

REVISIONS

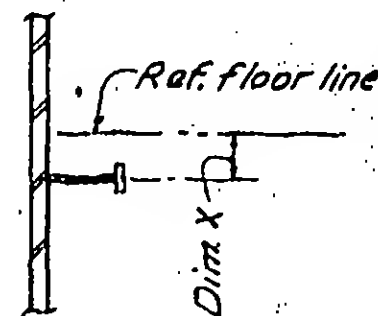


1-3/4" x 0-6" concrete
anchor studs typical
between each pair of
columns. All four walls

4-3/4" x 0-6" concrete
anchor studs typical
all four corners

Exterior
col. ref. line

Plan



| Floor | Dim. X |
|--------|--------|
| 7 | 5" |
| 9 | 4" |
| 10-40 | 2" |
| 41 | 5" |
| 43 | 4" |
| 44-74 | 2" |
| 75 | 5" |
| 77 | 4" |
| 78-106 | 2" |
| 107 | 2'-2" |

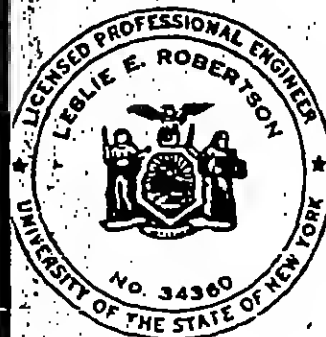
* 2" below top of
structural slab

For details at columns
see key plans 18-AB3

TYPICAL ARRANGEMENT OF ANCHOR DETAILS AT EXTERIOR WALL OF BUILDING

For floors covered see Schedule

18-AB4-2.1



DESIGNED
S. Karp
DRAWN
A. FRANQUI

REVIEWED
(U) Brenner

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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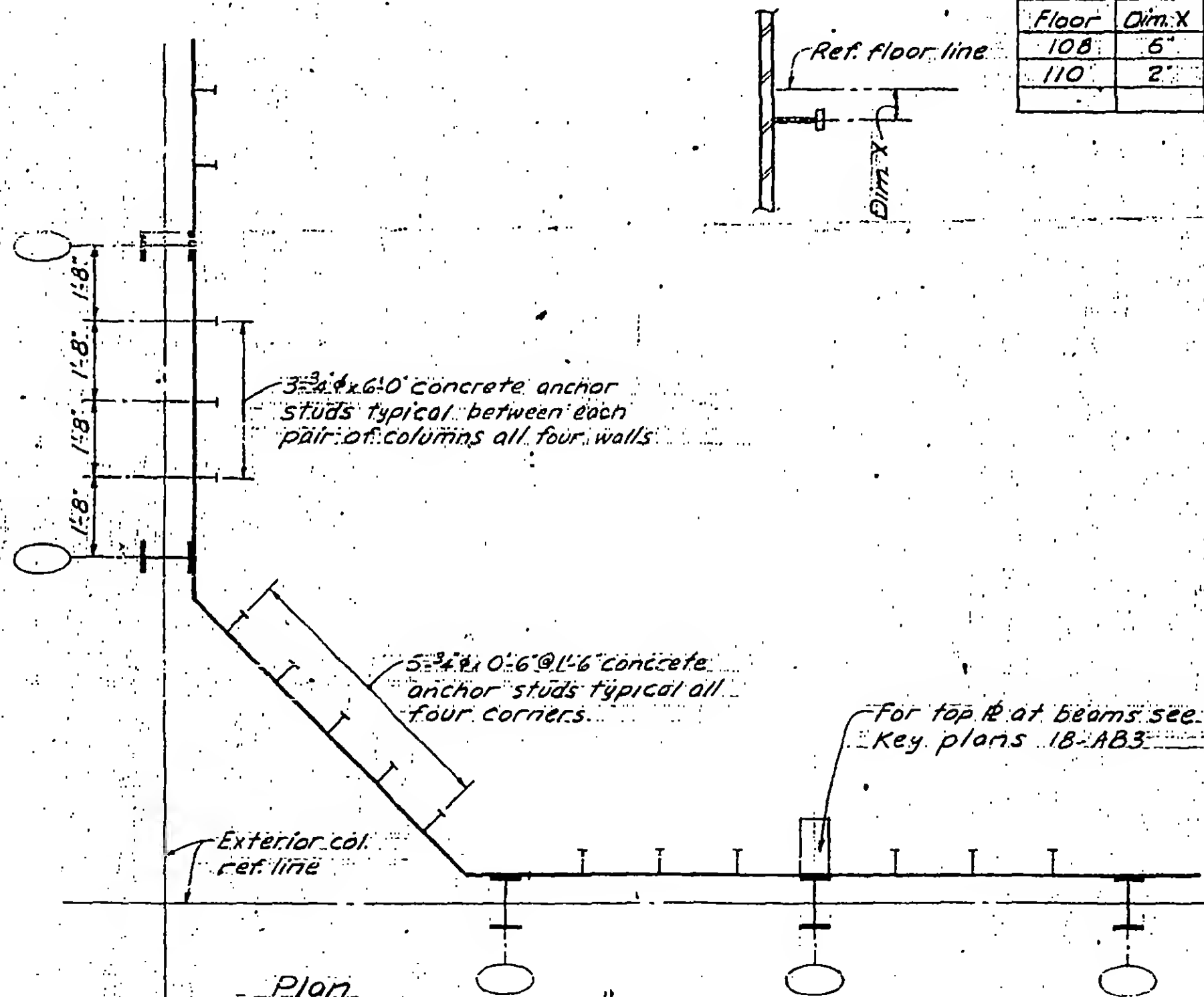
PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR DETAILS AT EXTERIOR WALL

DATE 2-7-69

REVISIONS

| Floor | Dim. X |
|-------|--------|
| 108 | 6" |
| 110 | 2" |



SIGNED S. Karp

DRAWN A. FRANQUI

REVIEWED W. Brewer

TYPICAL ARRANGEMENT OF ANCHOR DETAILS AT EXTERIOR WALL OF BUILDING

For floors covered see schedule

18-AB4-2.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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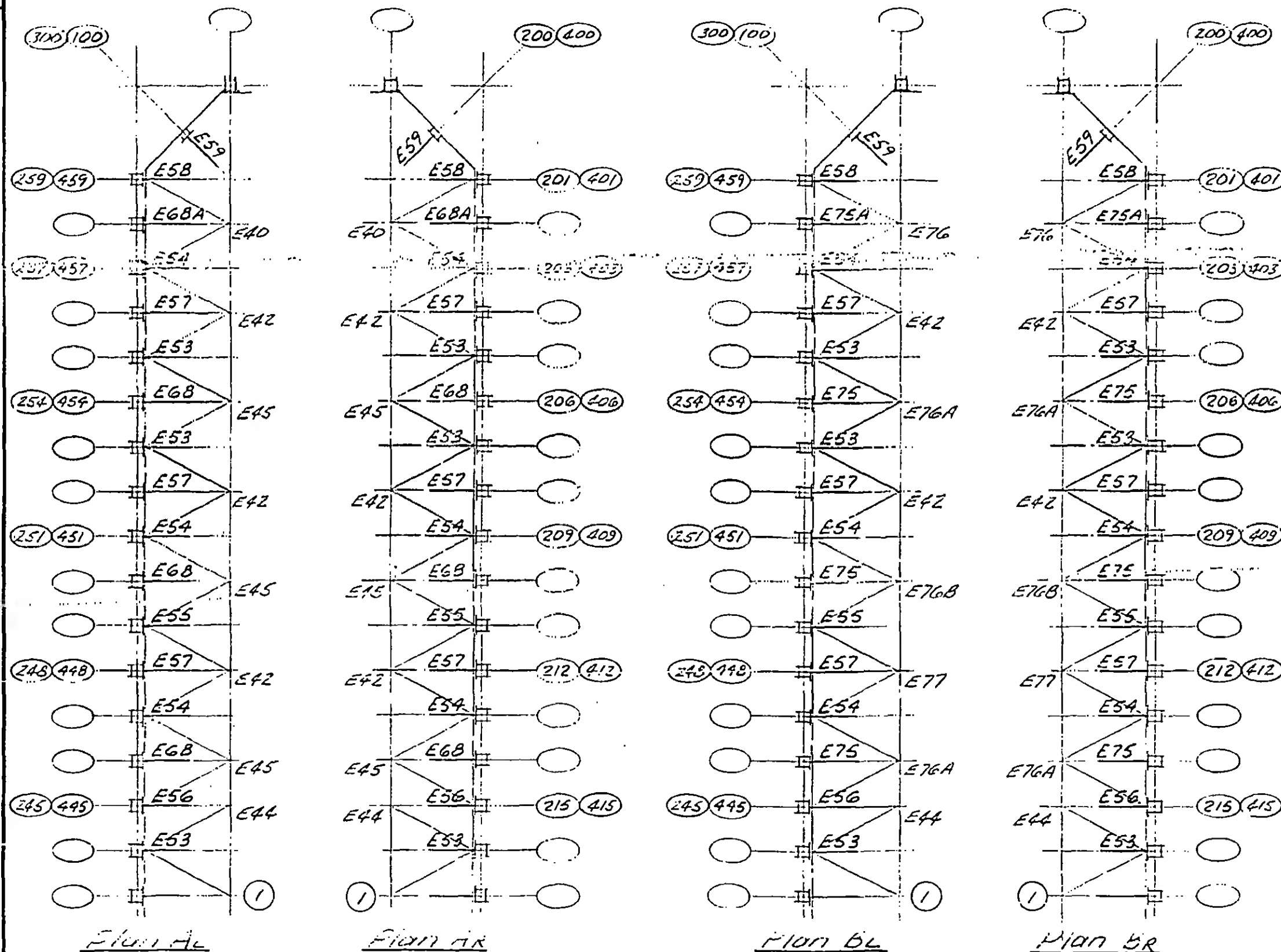
PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR DETAILS - EXTERIOR WALL DETAIL PLANS A4B

DATE 2-7-69

REVISIONS

See 18-A84-5 for details indicated.



Note ① E83 except where Plan D or E are adjacent use Detail E82.



DESIGNED S. Karp

DRAWN J. Adams

REVIEWED W. Brewer

18-A84-3.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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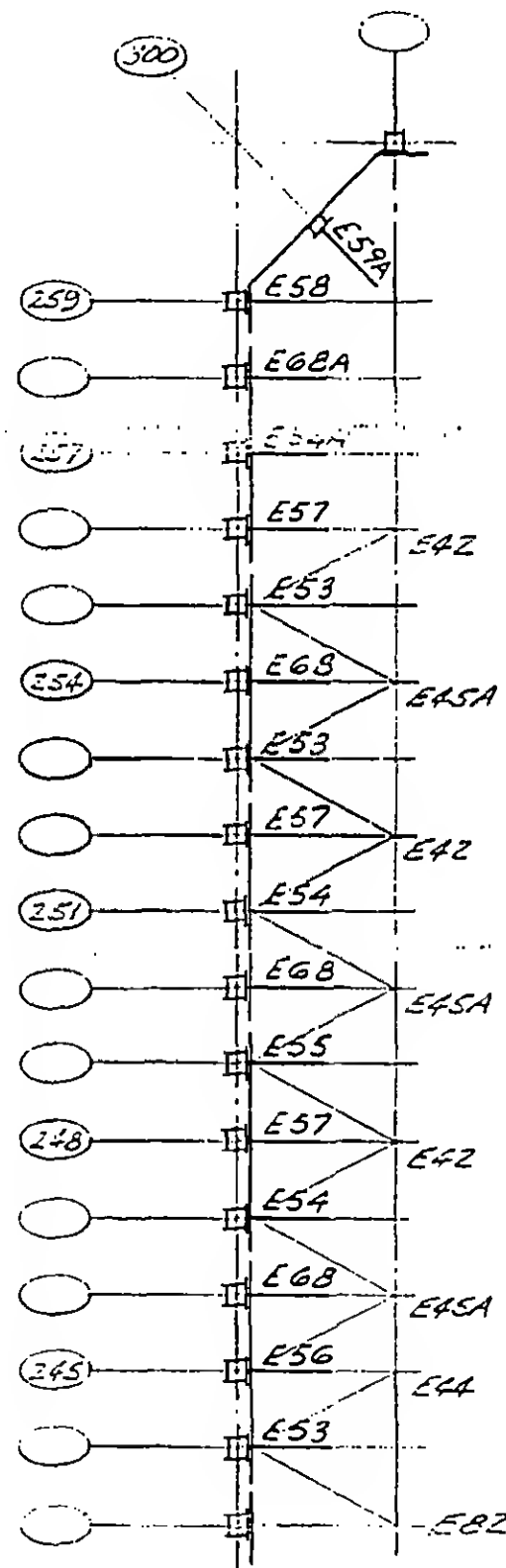
PROJECT THE WORLD TRADE CENTER

TITLE ANCHOR DETAILS-EXTERIOR WALL DETAIL PLAN C

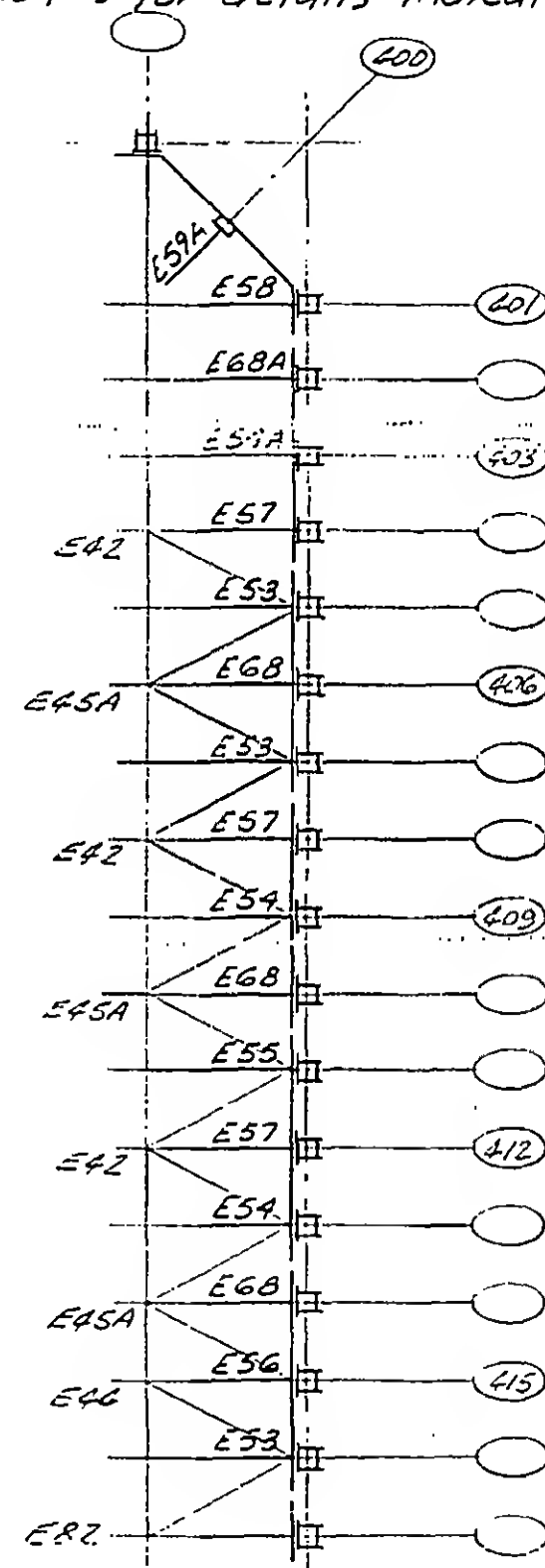
DATE 2-7-69

REVISIONS

See 18-AB4-5 for details indicated



Plan CL



Plan CR

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S. KarpDRAWN
J. AdamsREVIEWED
W. Brewer

18-AB4-3.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

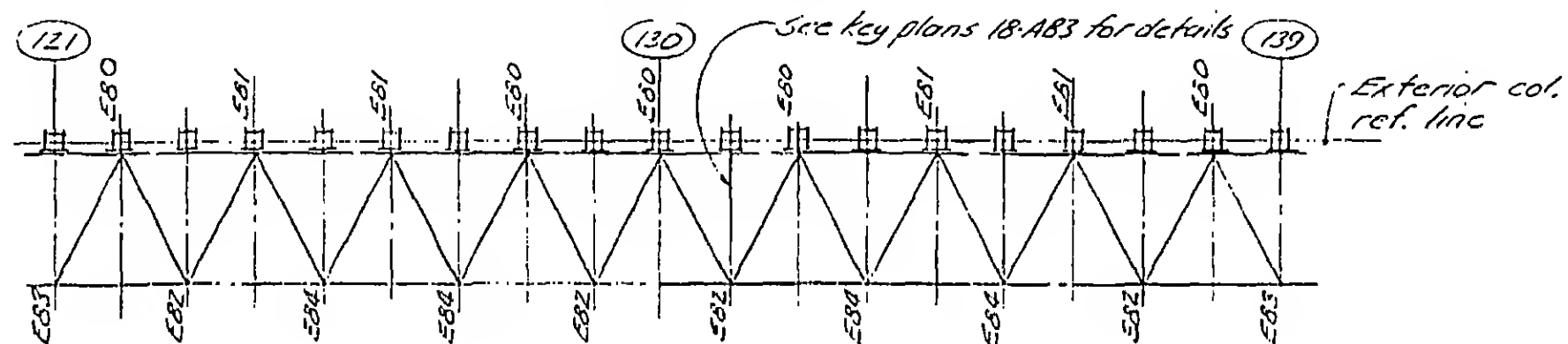
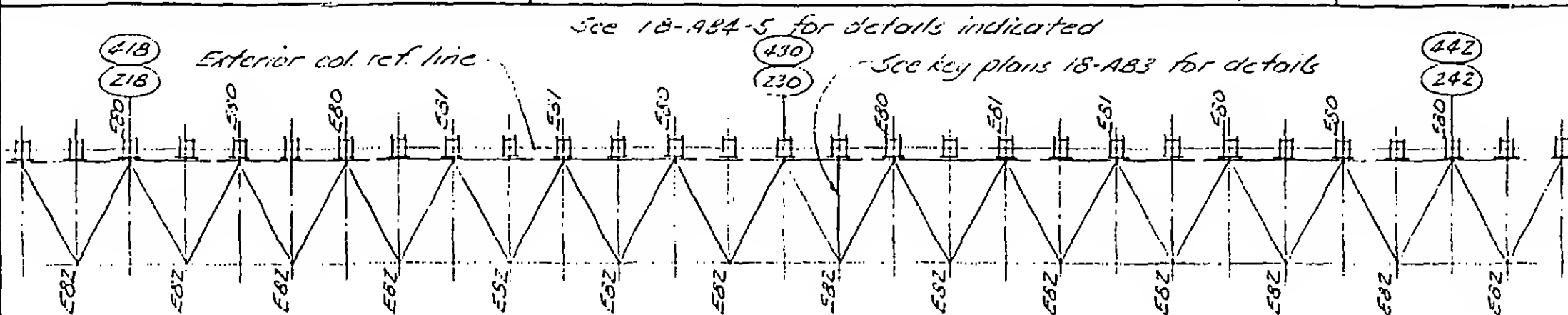
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

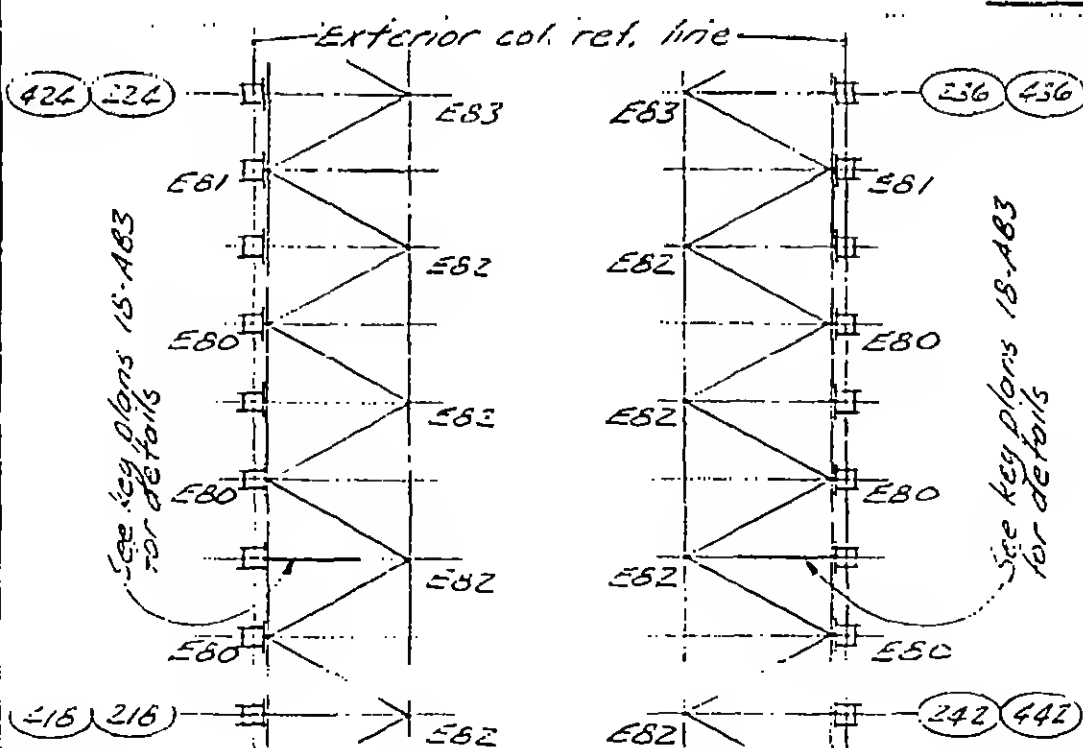
TITLE ANCHOR DETAILS-EXTERIOR WALL DETAIL PLANS D,E,F

DATE 2-7-69

REVISIONS

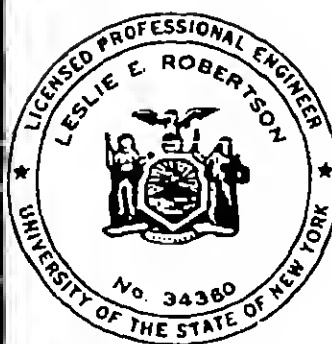


Plan F



Plan EL

Plan ER



DESIGNED
J. Karp
DRAWN
J. Adams

REVIEWED
W. Brewer

18-AB4-3.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

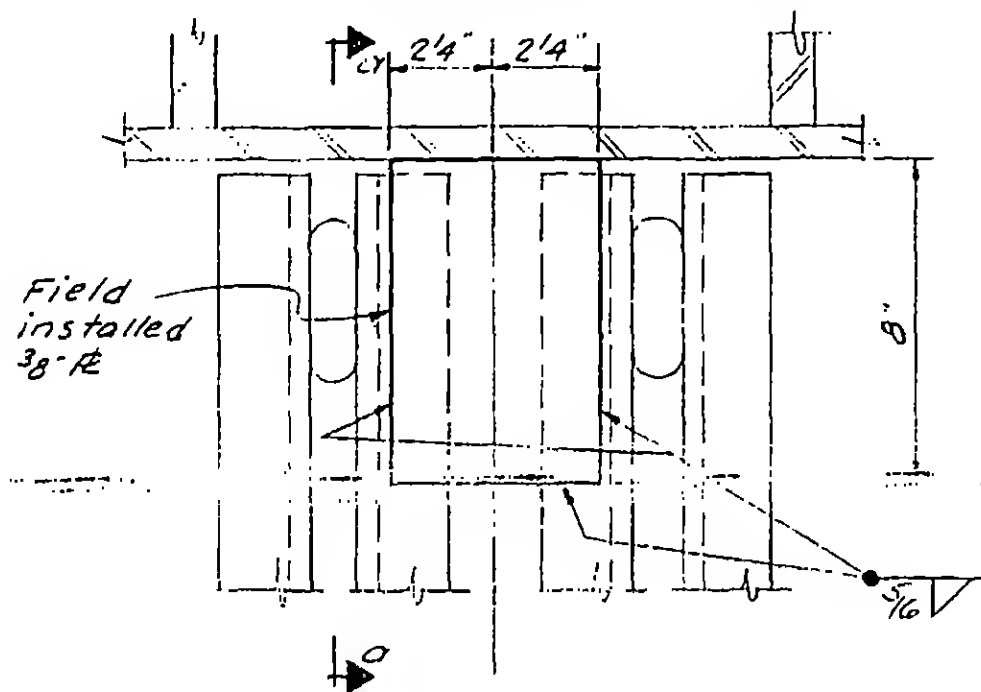
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PROJECT *THE WORLD TRADE CENTER*

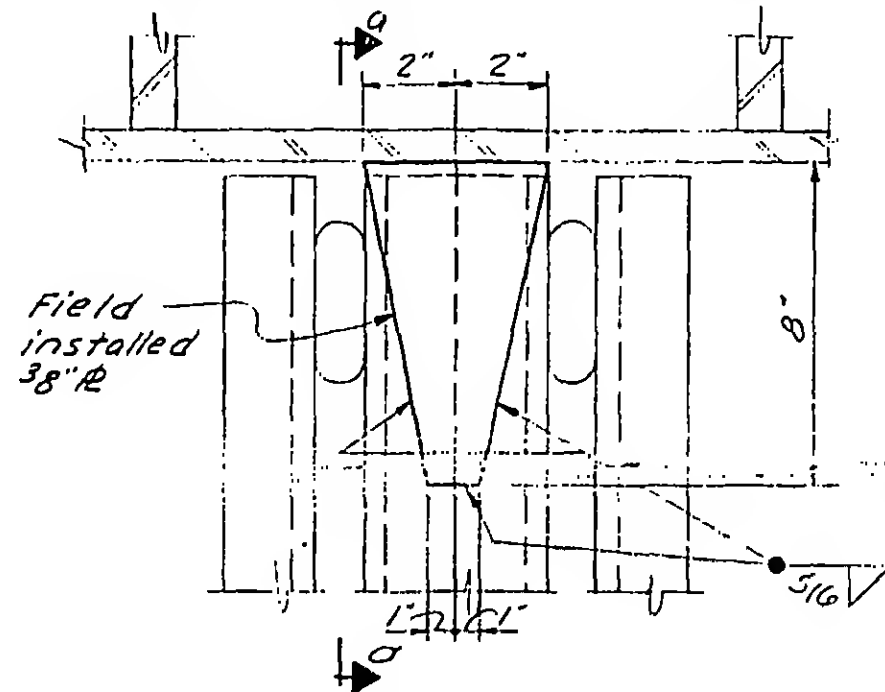
TITLE *DETAILS E61 - E67*

DATE *2-7-69*

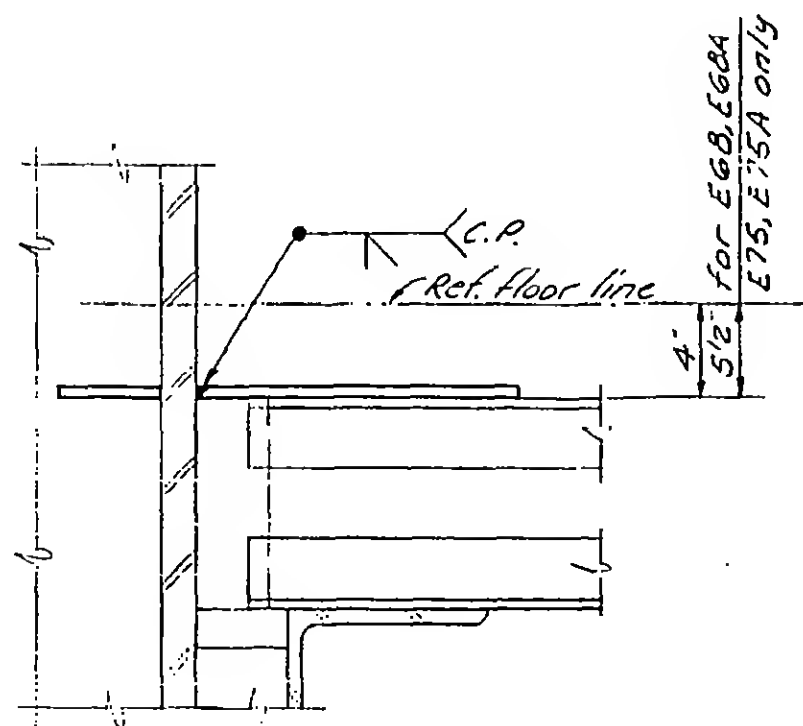
REVISIONS



Detail E61, E62, E65, E67



Detail E63, E64, E66



Section a-a



DESIGNED
S. Karp

DRAWN
J. Adams

REVIEWED
W. Brewer

18-AB4-4.1

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

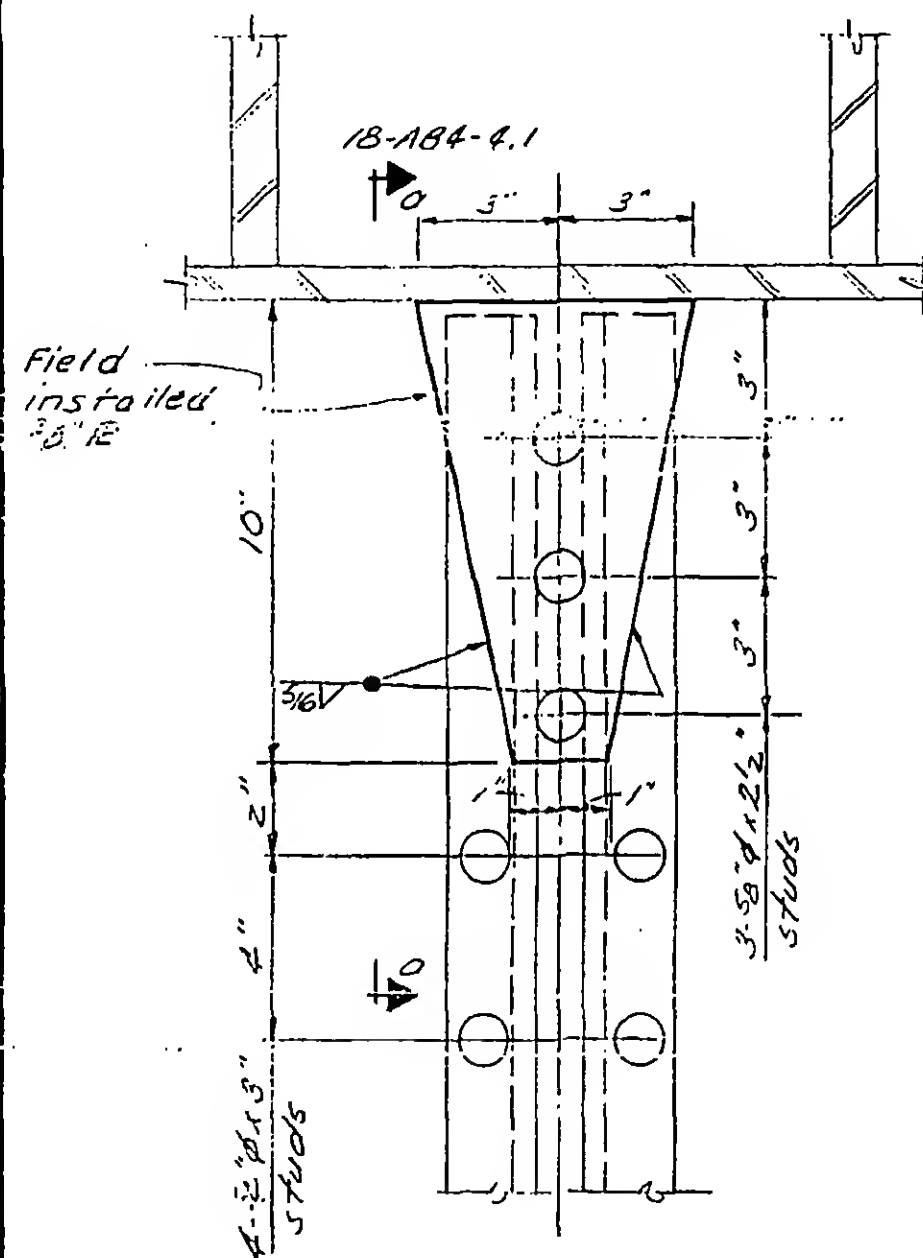
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

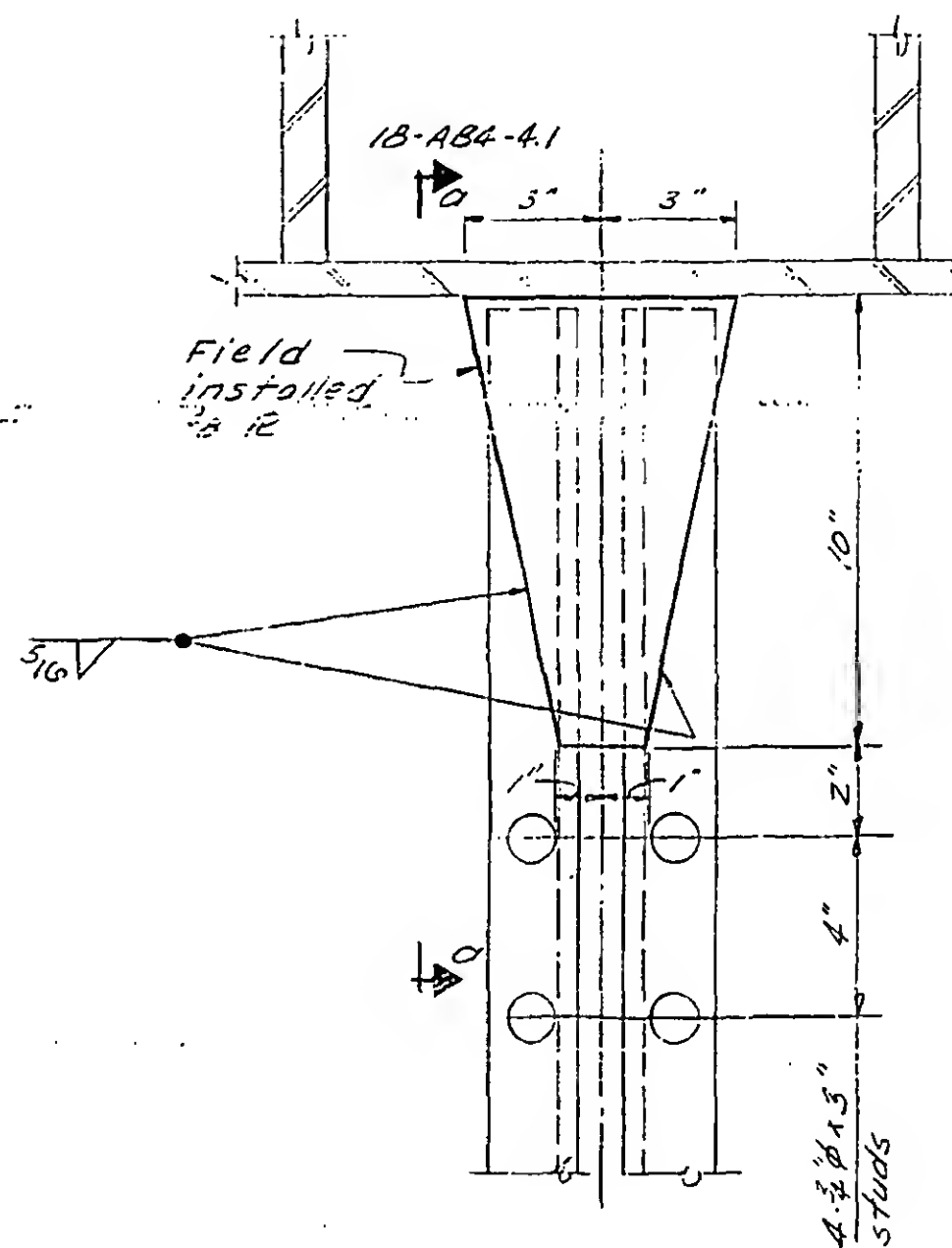
TITLE DETAILS E60, E69

DATE 2-7-69

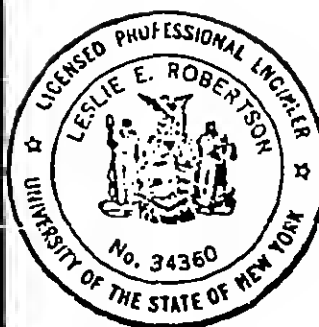
REVISIONS



E60



E69



DESIGNED
S. Karp
DRAWN
J. Adams

REVIEWED
L. J. Blum

18-AB4-4.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

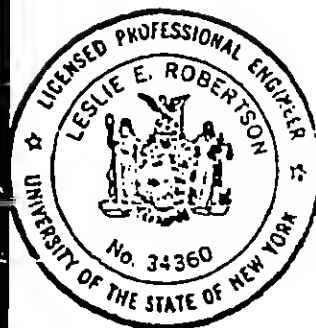
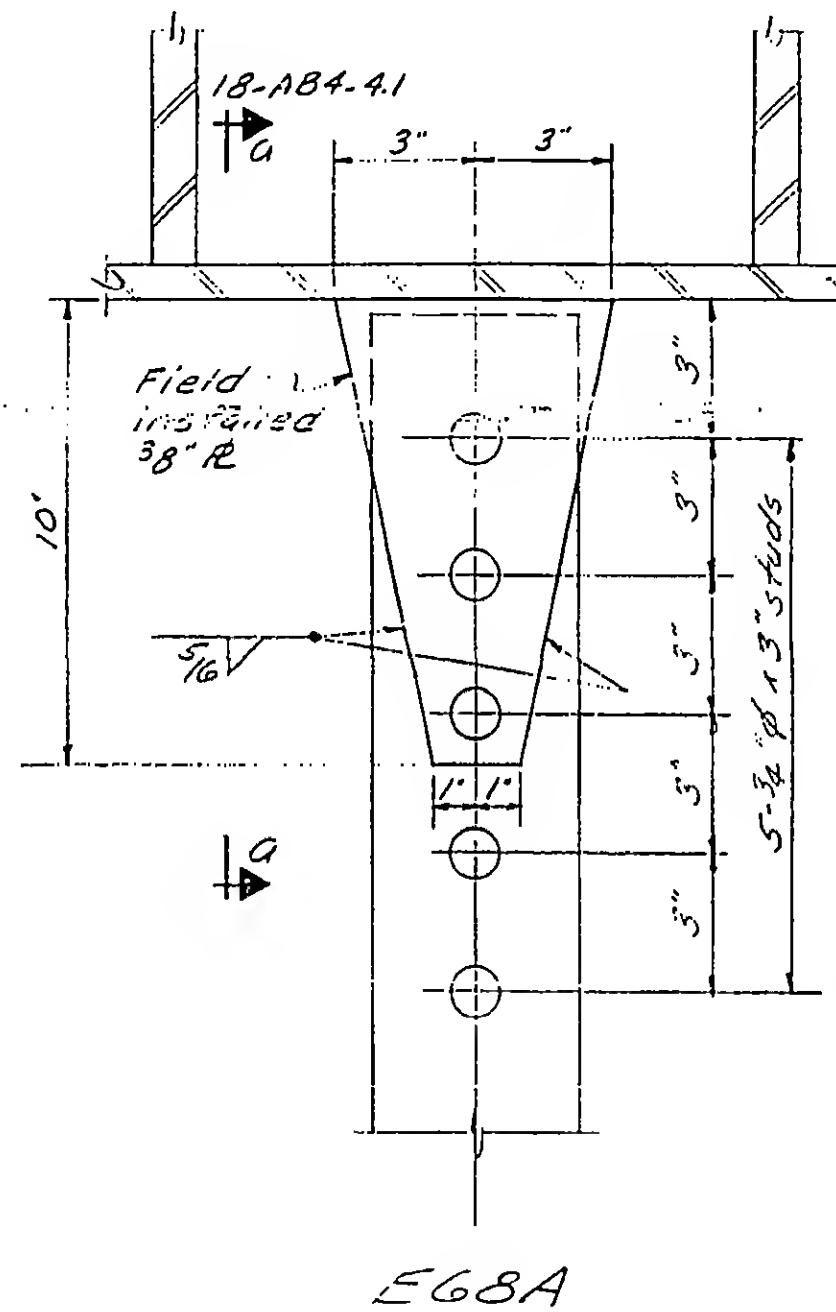
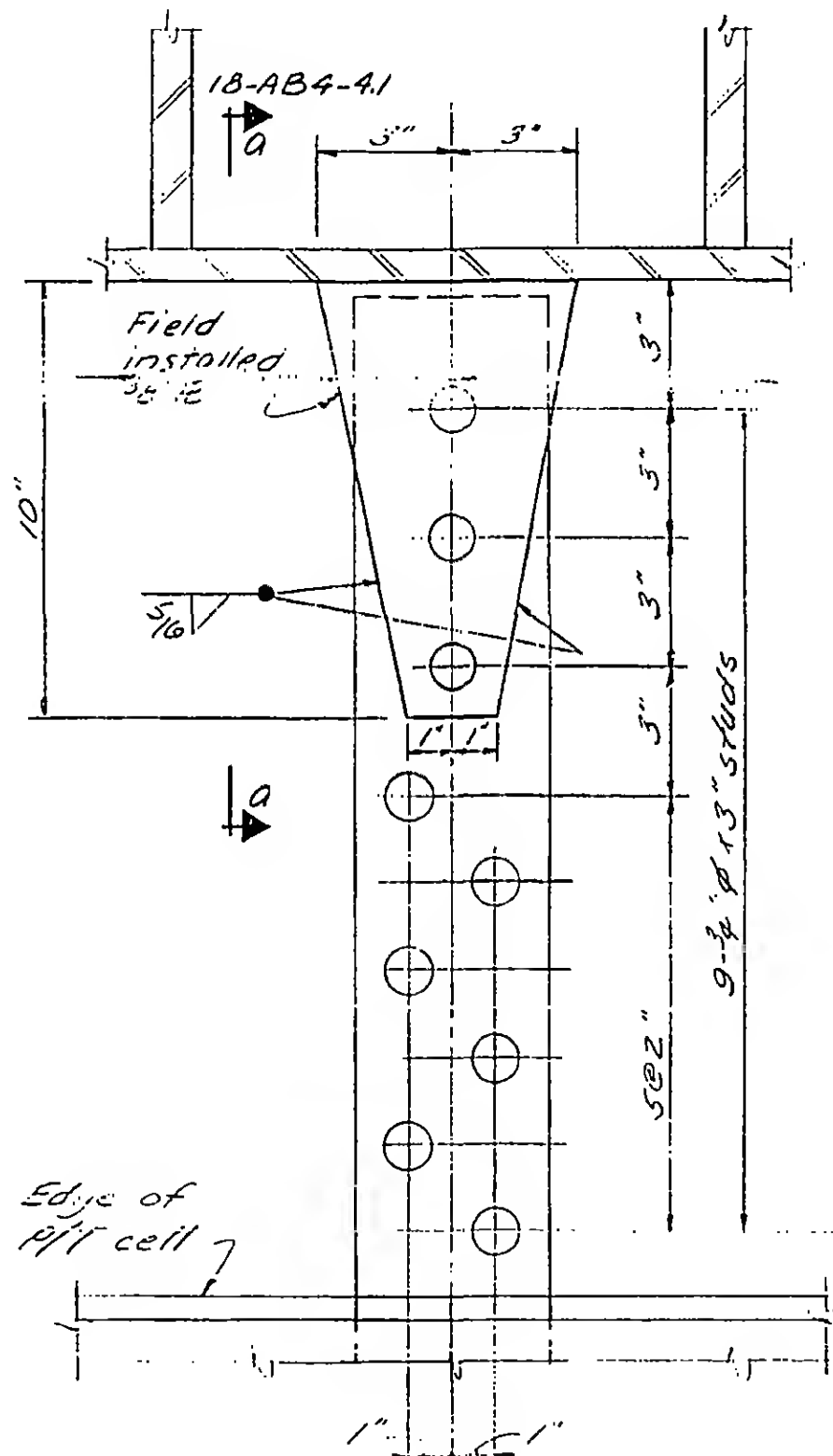
Structural & Civil Engineers

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TITLE DETAILS E6B AND E68A

DATE 2-7-69

REVISIONS



S. Karp

DRAWN
J. AdamsREVIEWED
W. Adams

18-AB4-4.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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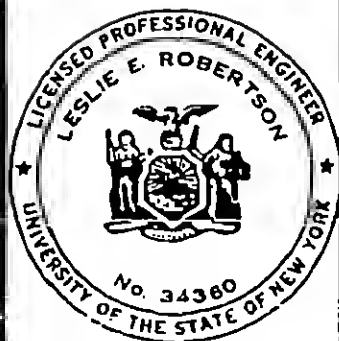
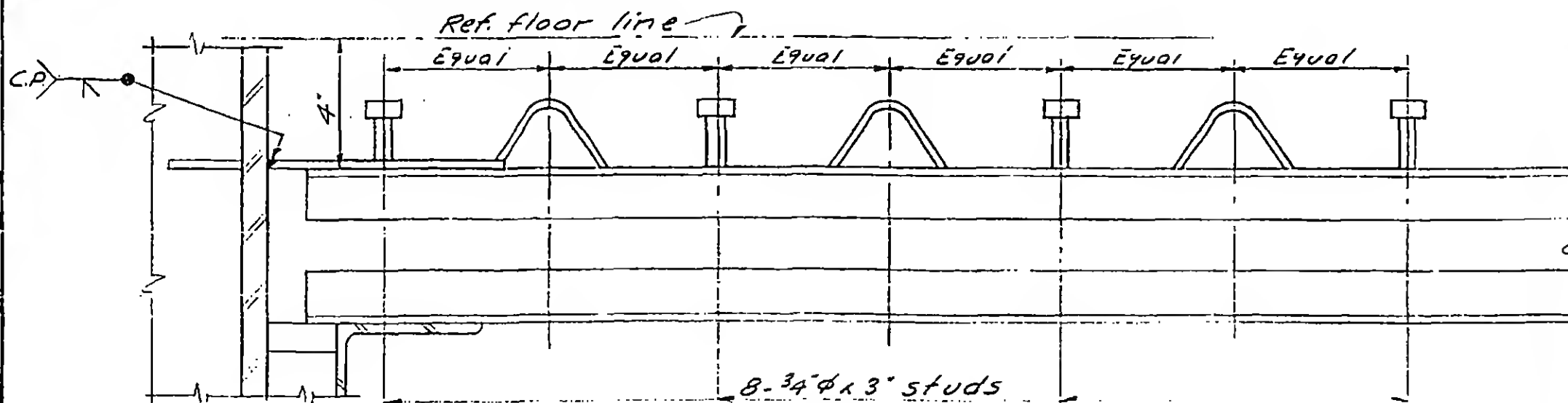
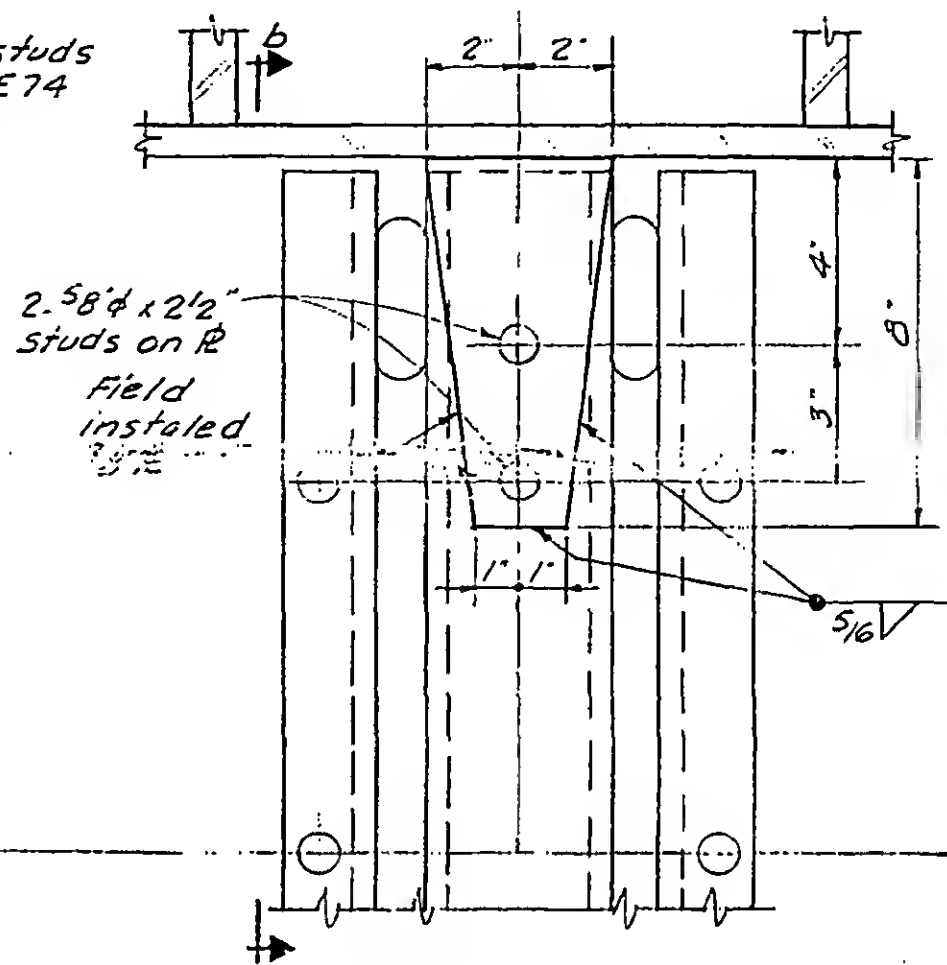
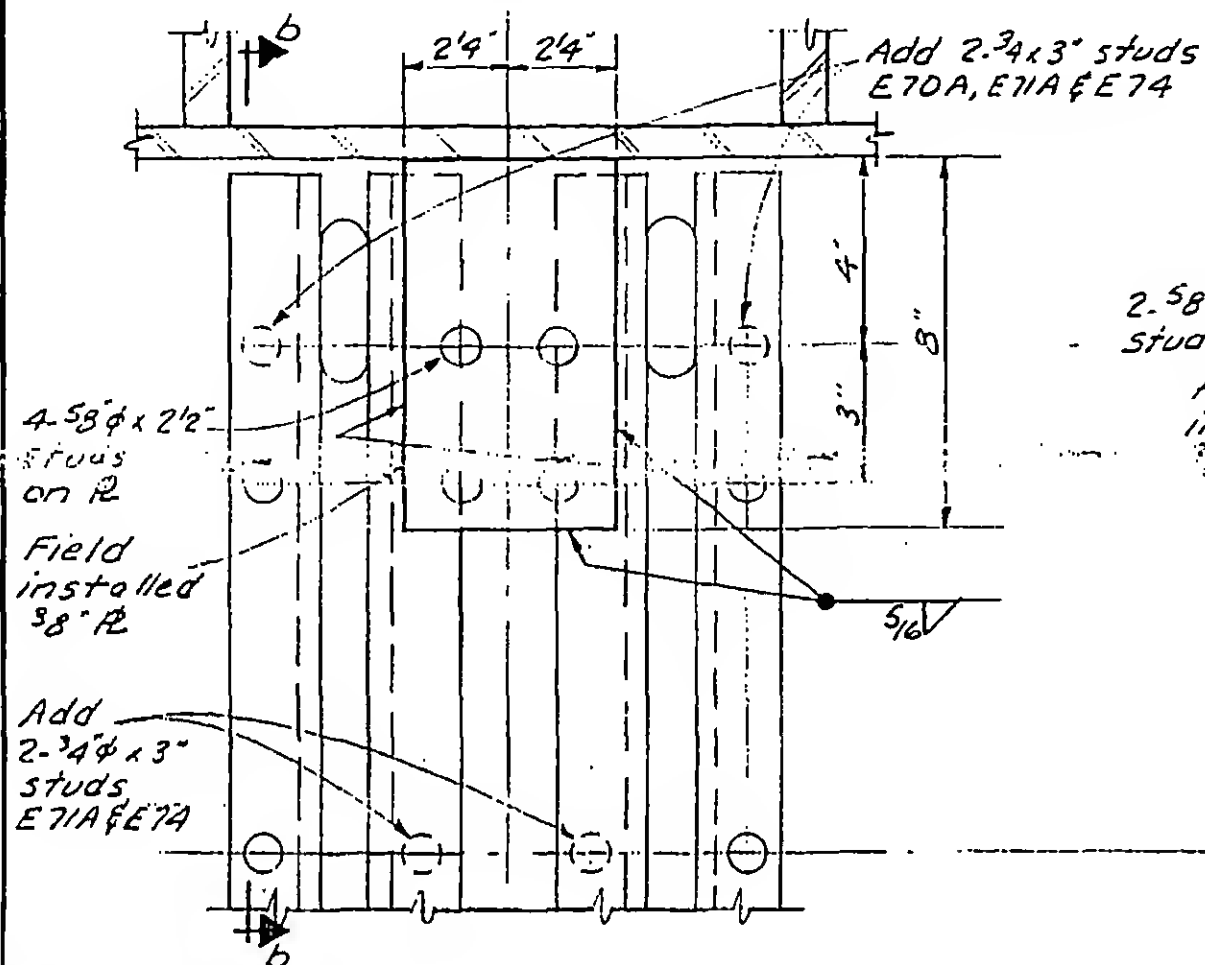
PROJECT THE WORLD TRADE CENTER

TITLE

DETAILS E70, E70A, E71, E71A, E74

DATE 2.7.69

REVISIONS



DESIGNED S. KARP

DRAWN A. FRANQUI

REVIEW W. B. JONES

18-AB4-4.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

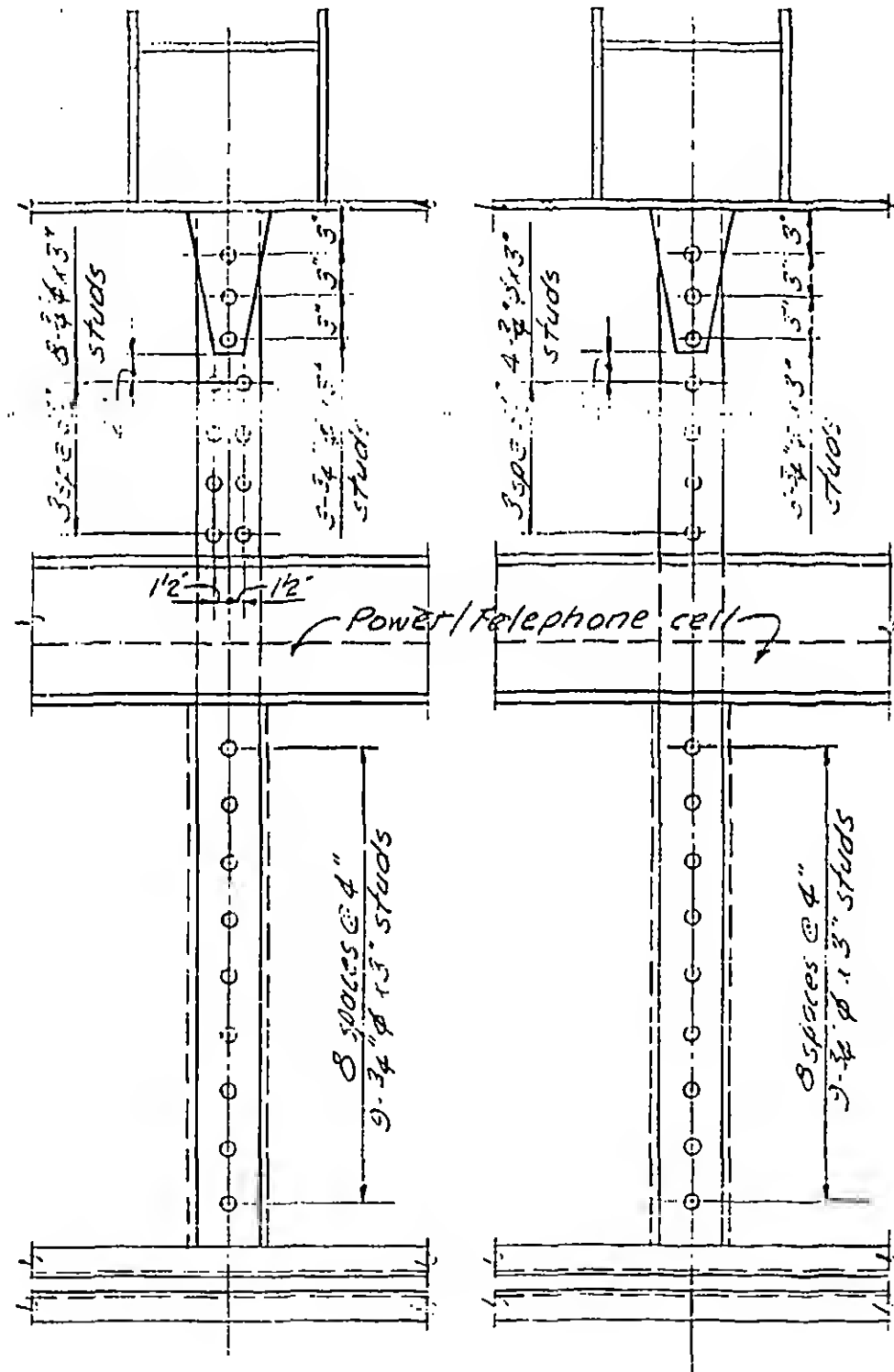
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TITLE DETAILS E75 AND E75A

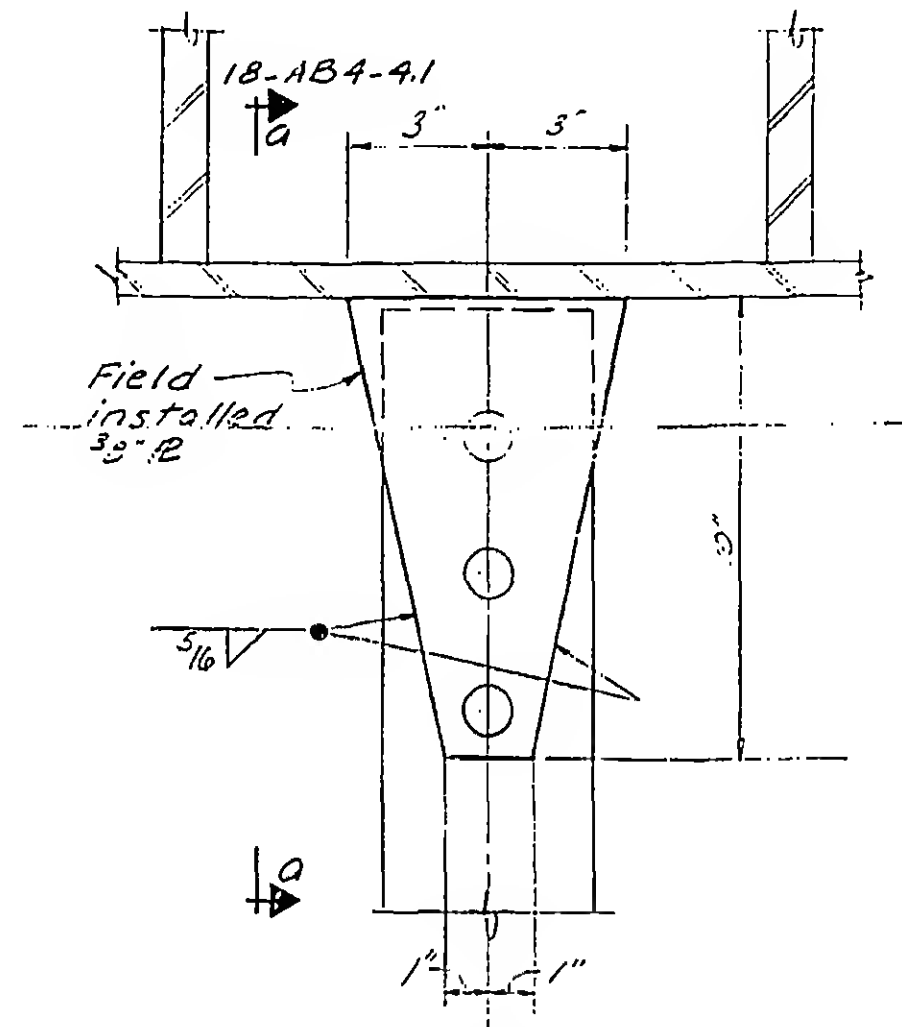
DATE 2-7-69

REVISIONS

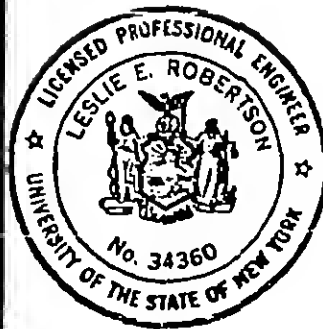


E75

E75A



Detail E75, E75A

DESIGNED
S. KarpDRAWN
J. AdamsREVIEWED
W. Breuer

18-AB4-4.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

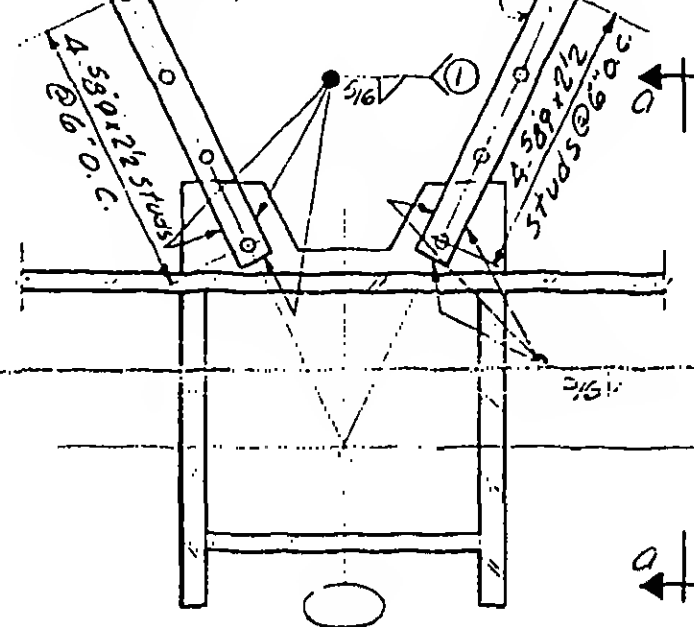
PROJECT THE WORLD TRADE CENTER

TITLE DETAILS E50, E51, E52, E80, E81, E82, E83

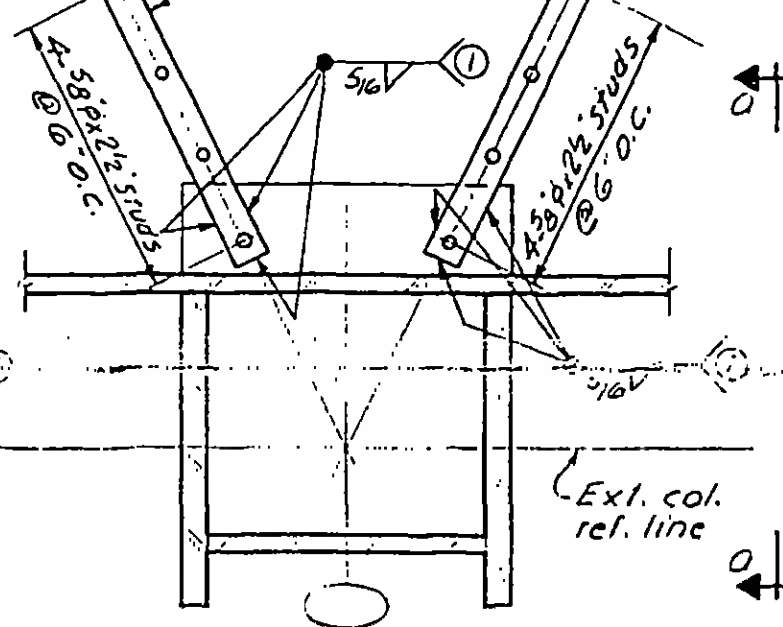
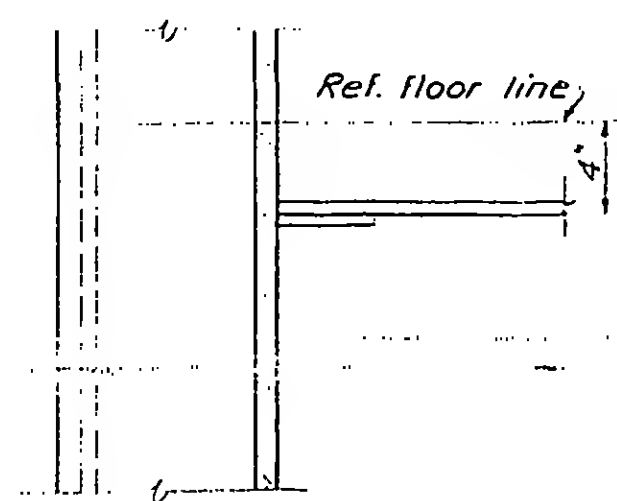
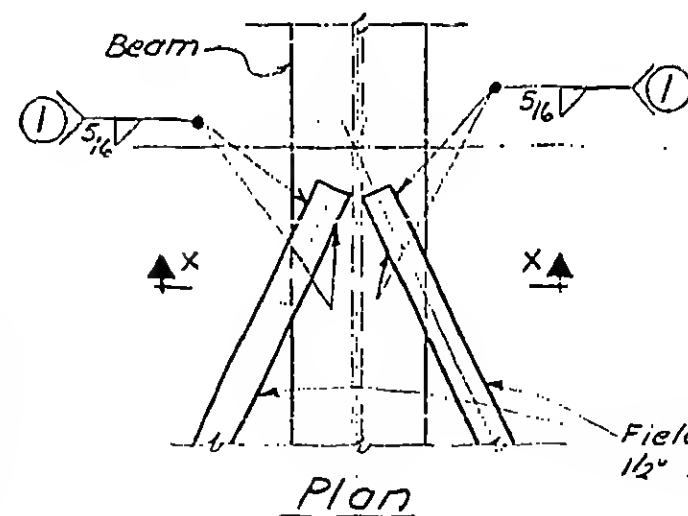
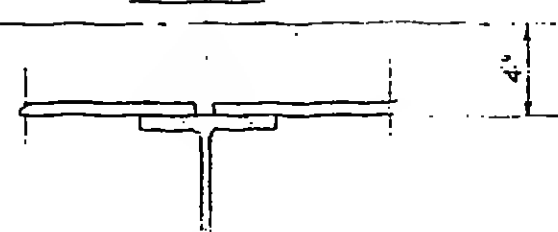
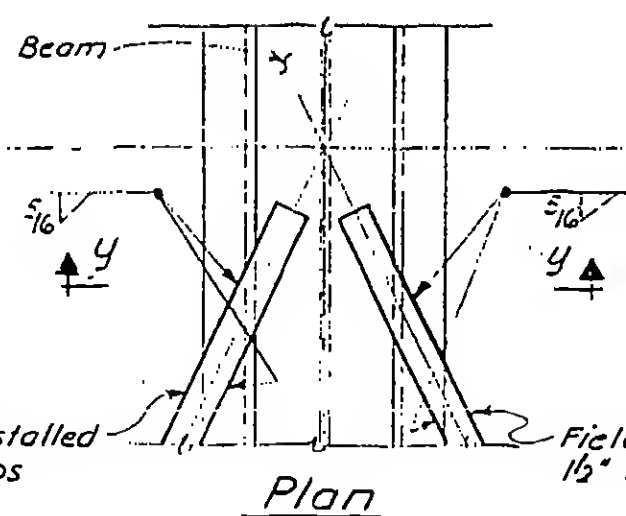
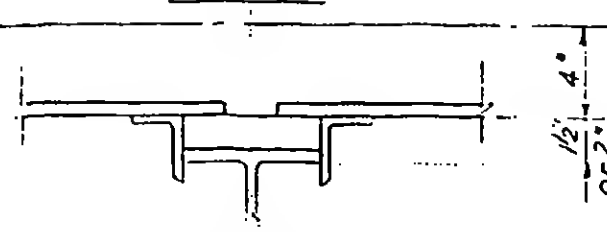
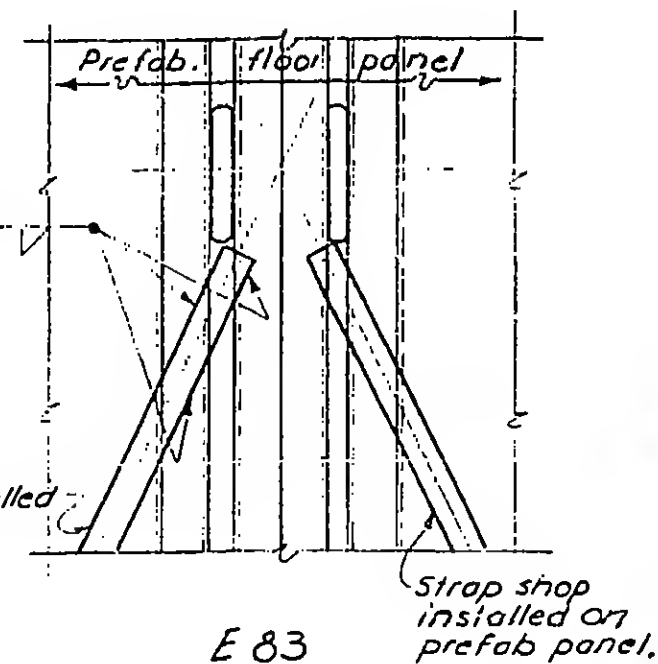
DATE 2-7-69

REVISIONS

1/2" straps from prefab. floor panels E50 & E51,
field installed 1/2" straps E80.

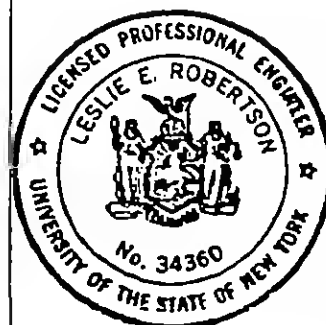
E50, E51, E80

1/2" straps from prefab. floor panels E52,
field installed 1/2" straps E81.

E52, E81Section a-aPlanSection x-xE82Beam at -4PlanSection y-yE82Beam at -52 or 6E83

Strap shop
installed on
prefab panel.

Note (1)
Min. length
of weld 6".



S. Karp

DRAWN
A. FRANQUIREVIEWED
U. J. Brewer

15-AB4-5.1

SKILLING, HEILE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

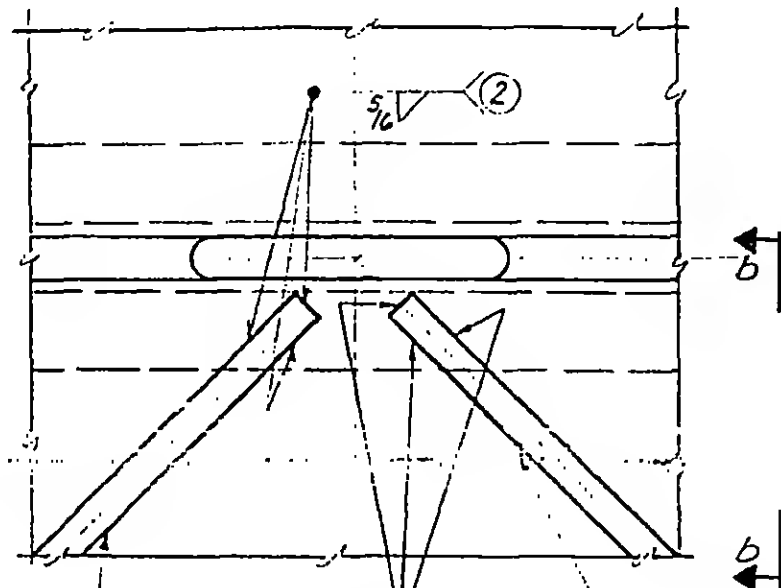
PROJECT THE WORLD TRADE CENTER

TITLE DETAILS E40, E42, E45, E53, E54, E55

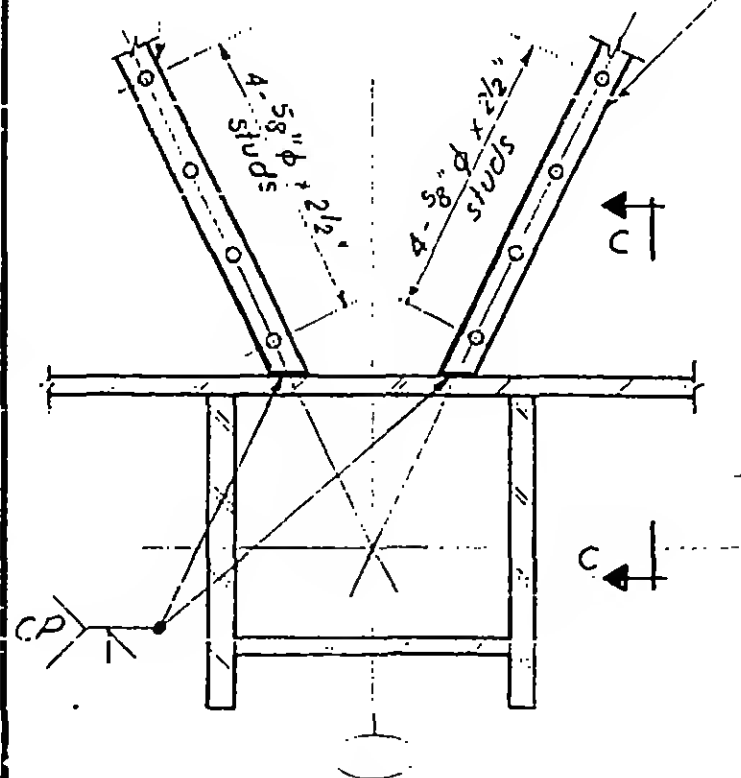
DATE 2-7-69

REVISIONS

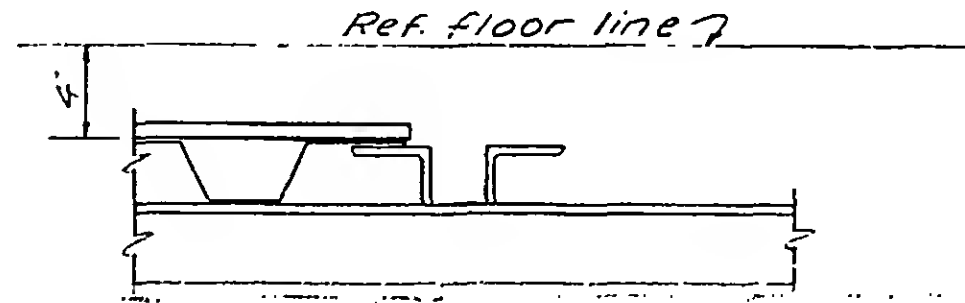
Note (2):
Minimum length of weld 4".



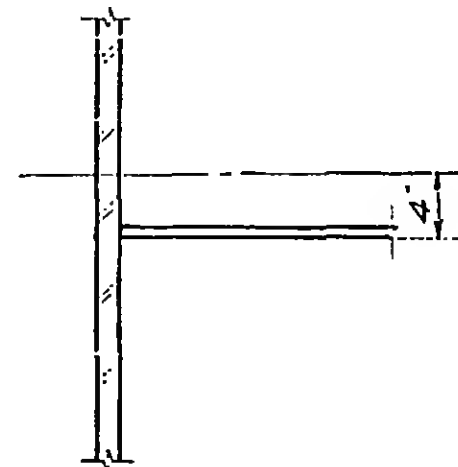
(2) 5/16
E40, E42, E45
Field installed 1/2" straps



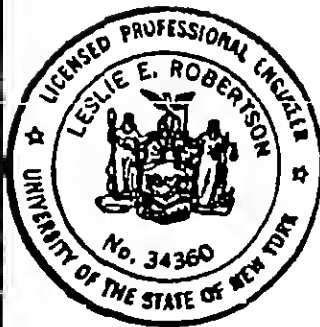
E53, E54, E55



Section b-b



Section c-c



DESIGNED
S. Karp

DRAWN
A. Fransui

REVIEWED
W. Brewer

18-AB4-5.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

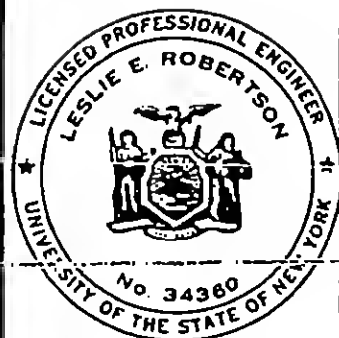
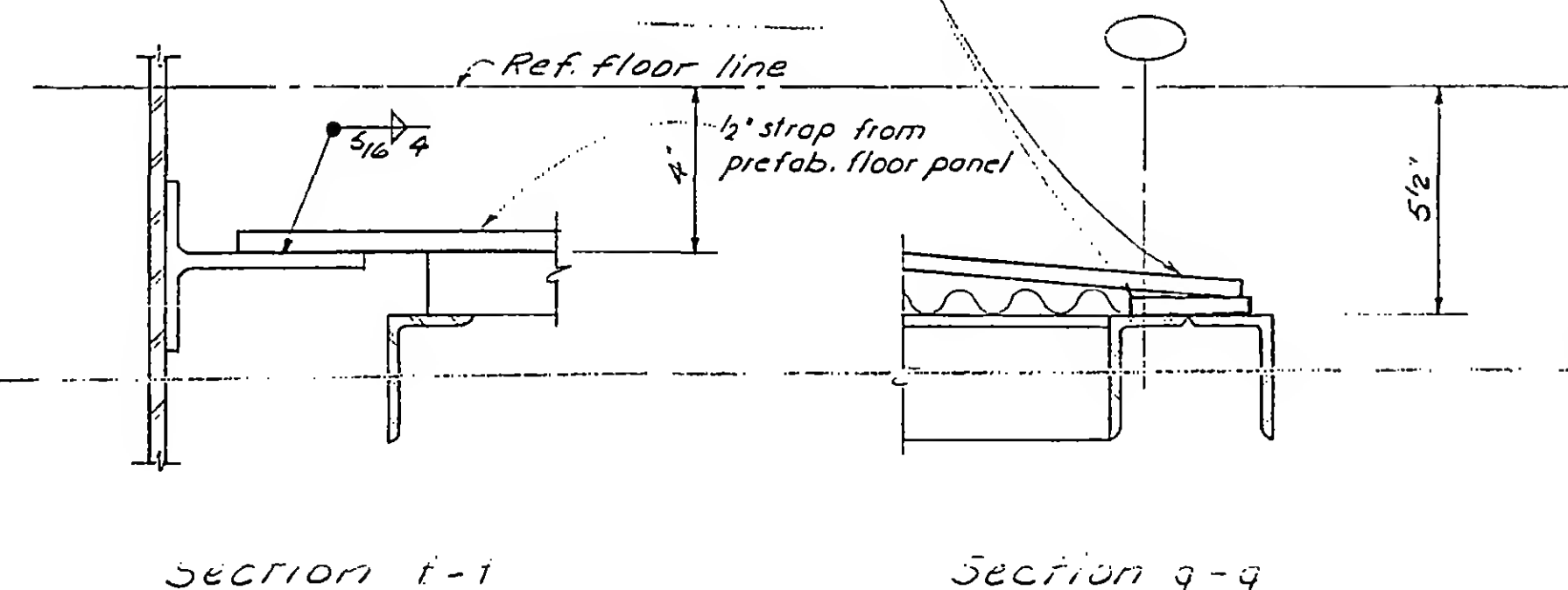
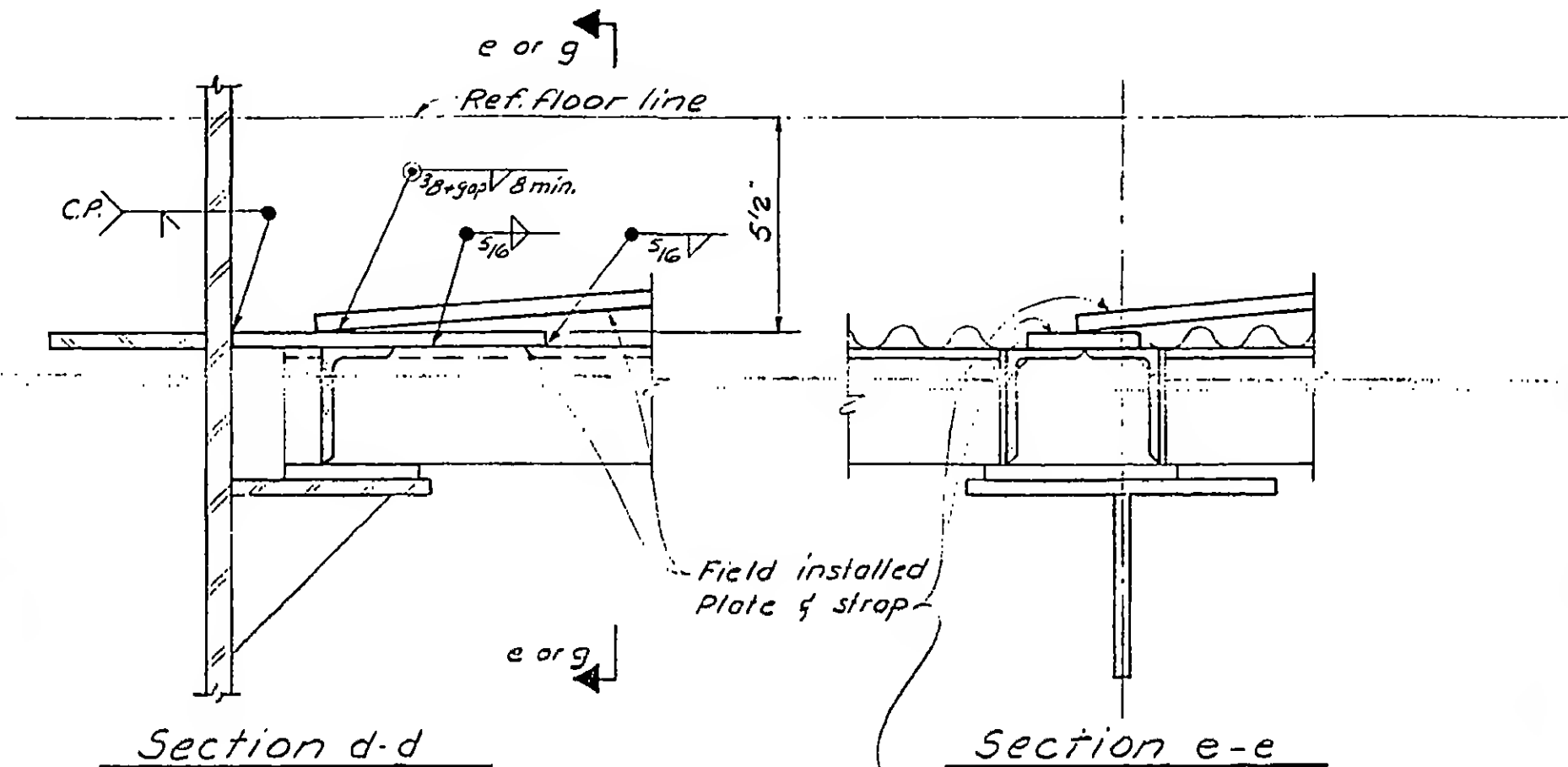
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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 2-7-69

REVISIONS



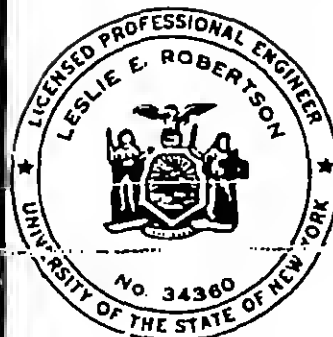
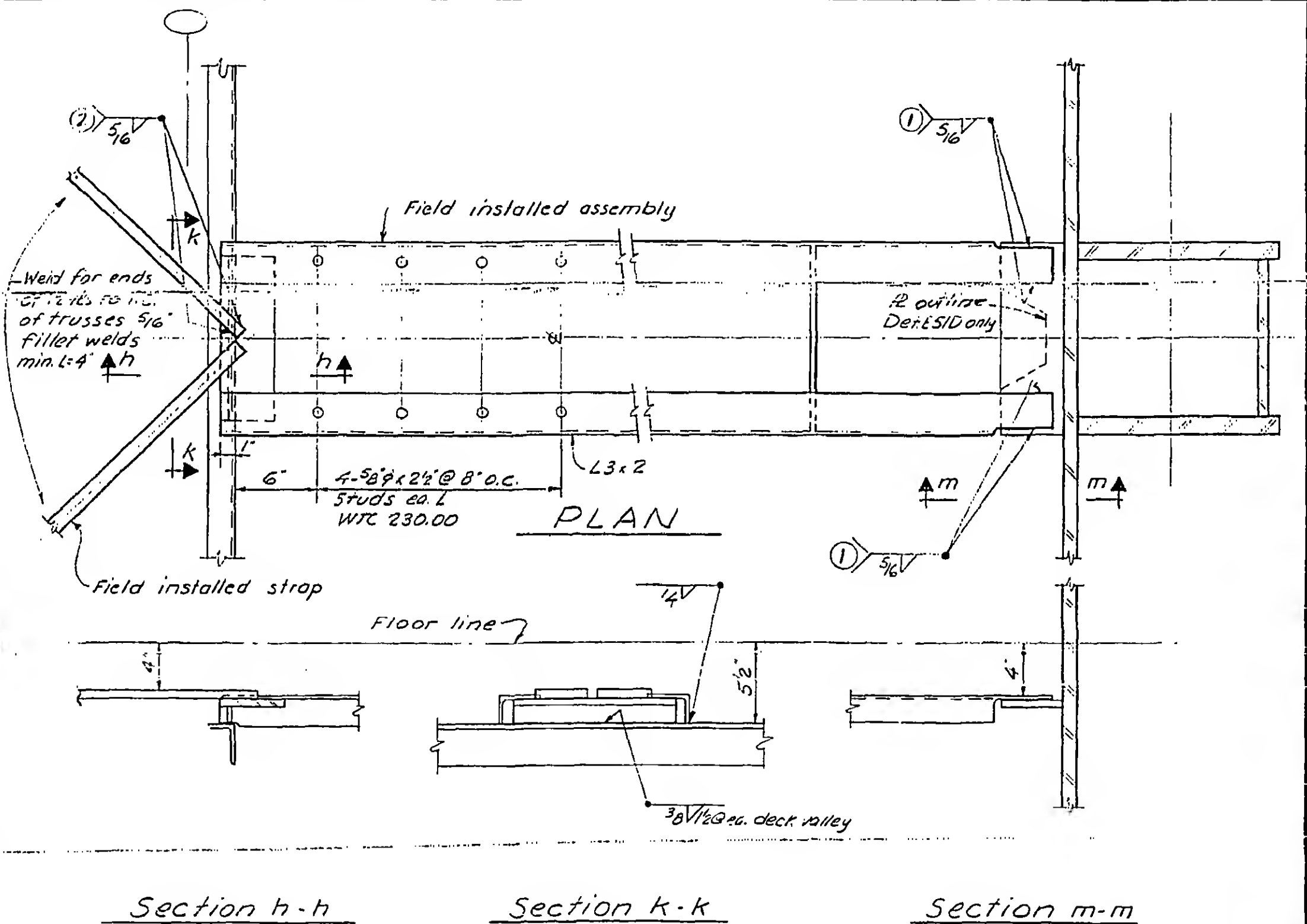
S. Karp

A. Franqui

W. Brewer

18-AB4-5.4

REVISIONS



DESIGNED
S. Karp

DRAWN
A. Franqui

REVIEWED
W. Brewer

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

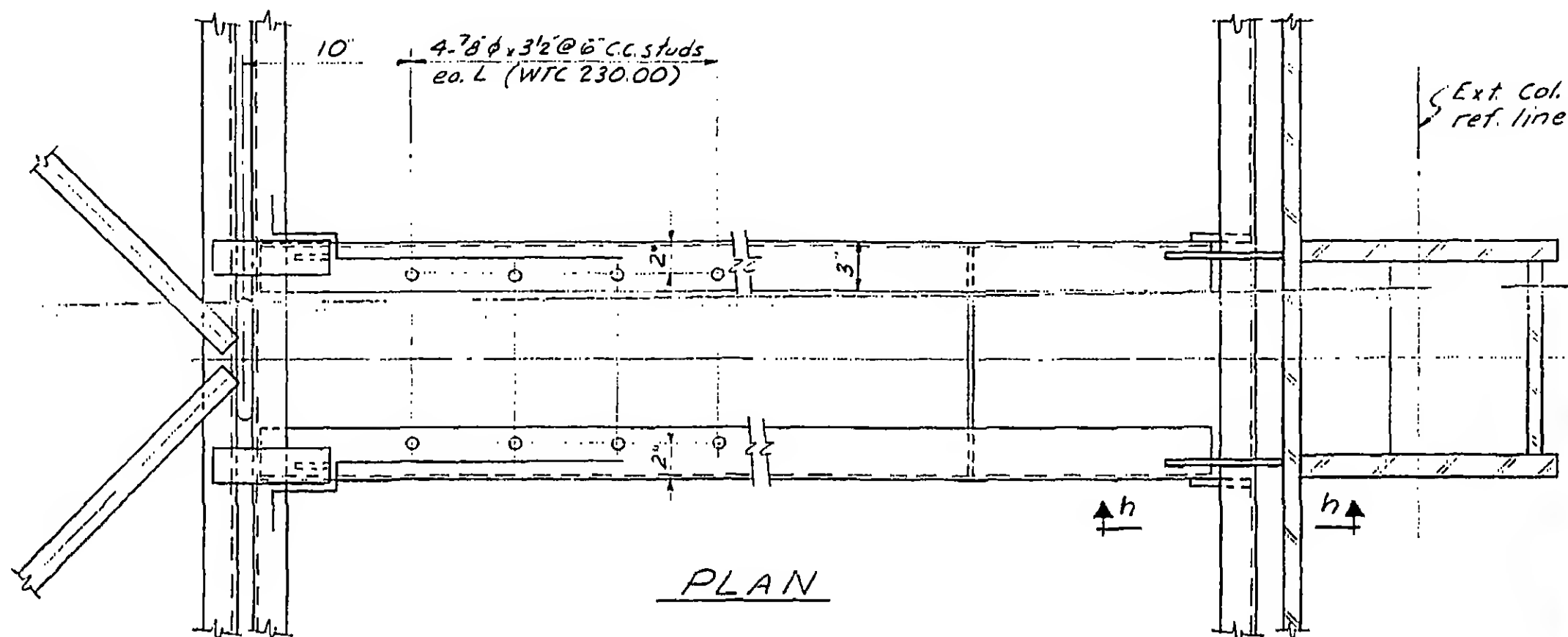
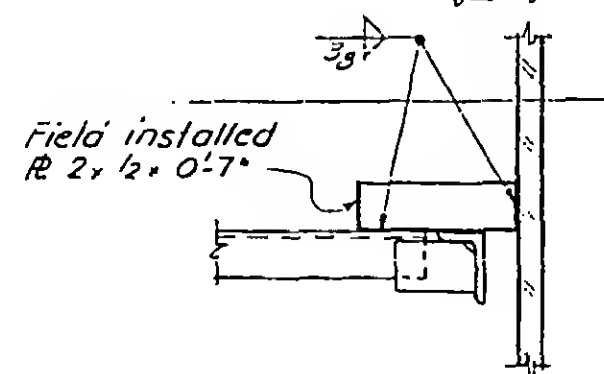
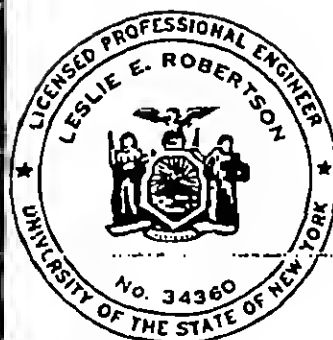
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PROJECT THE WORLD TRADE CENTER

TITLE DETAIL E54A

DATE 2-7-69

REVISIONS

PLANSection h-hDESIGNED
S. KarpDRAWN
A. FranzoiREVIEWED
W. Brewer

18-AB4-S.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAIL E59A

DATE 2-7-69

REVISIONS

Sim. det. E43

6" 6" 4-5/8" ϕ 2'2" studs

Field installed assembly

Min. L
4'ea. L

$\uparrow P$

$\uparrow P$

5/16" $\sqrt{4}$

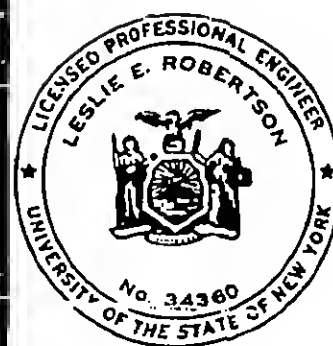
PLAN

5' Ext. column
ref. line

Floor line

4"

Section p-p



DESIGNED
S. Karp

DRAWN
A. Franqui

REVIEWED
W. Brewer

18-AB4-5.7

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

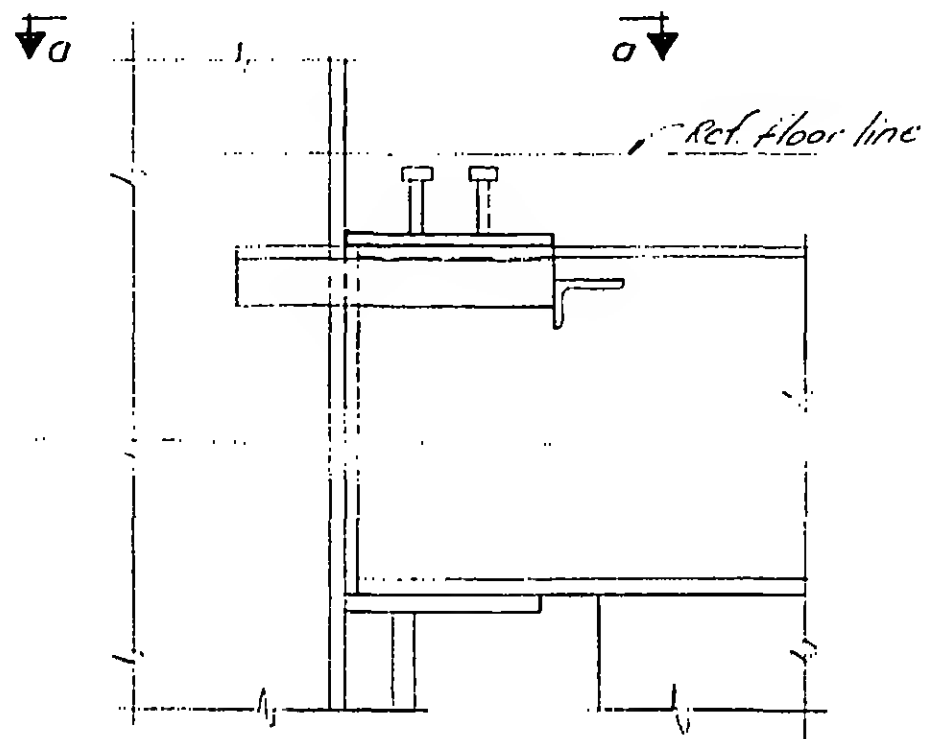
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

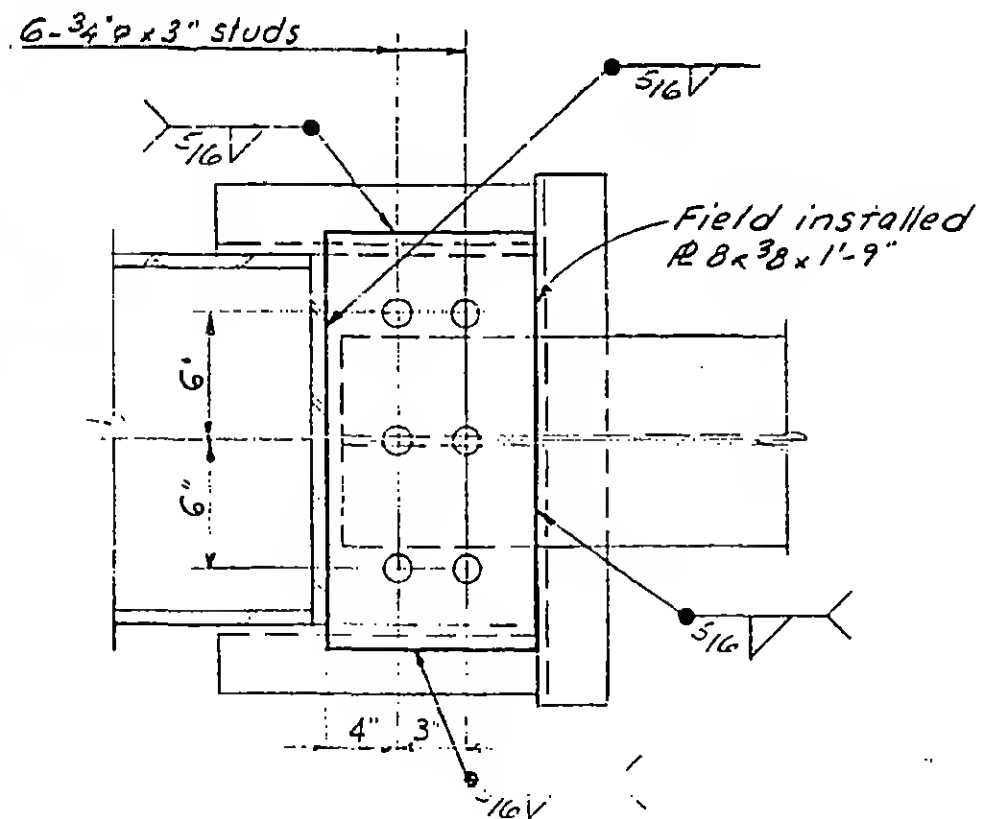
TITLE DETAILS 159, 160, 161, 161A, 163 & 163C

DATE 2-7-69

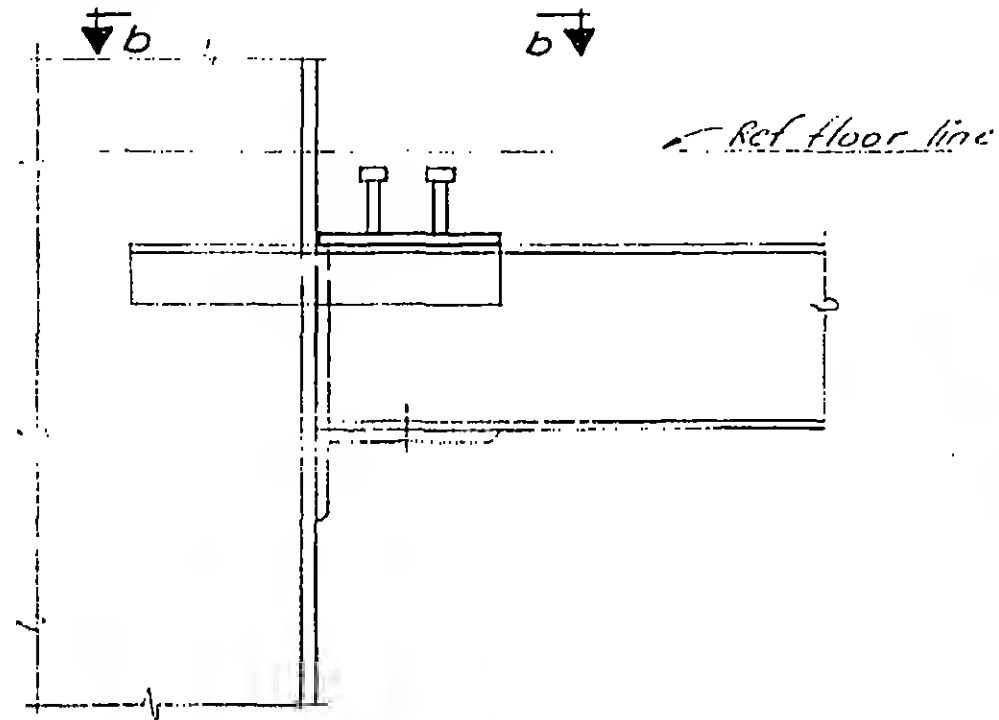
REVISIONS



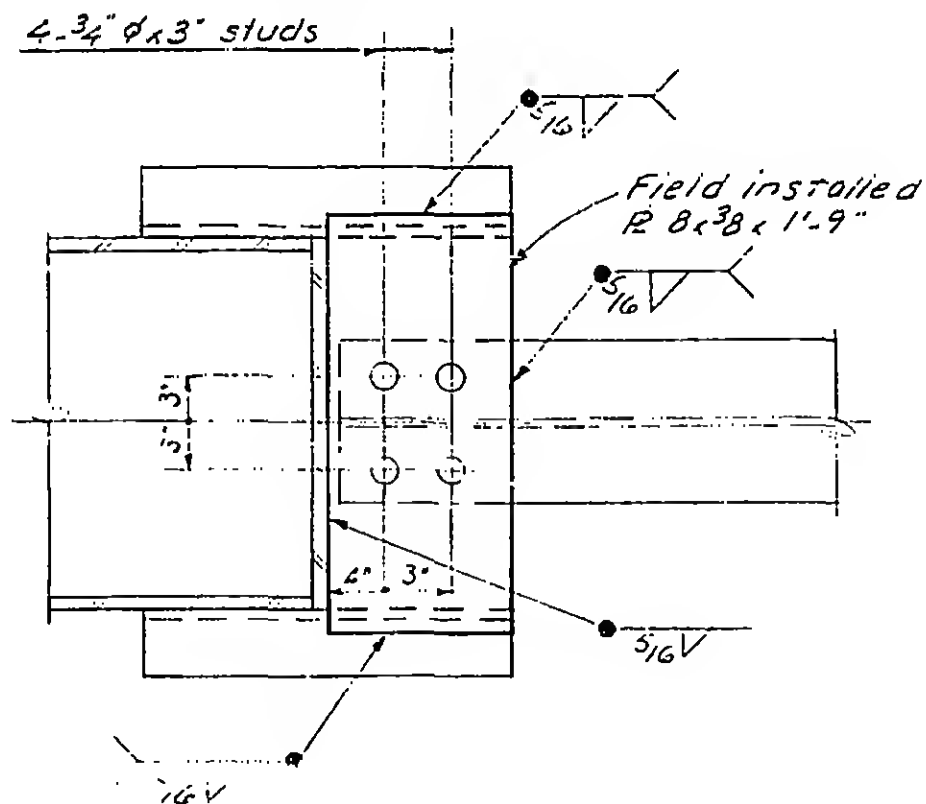
Detail 159, 160, 161



Plan a-a



Detail 163 & 163C



Plan b-b



DESIGNED
S. Karp

DRAWN
J. Adams

REVIEWED
W. Brewer

18-AB4-G.1

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

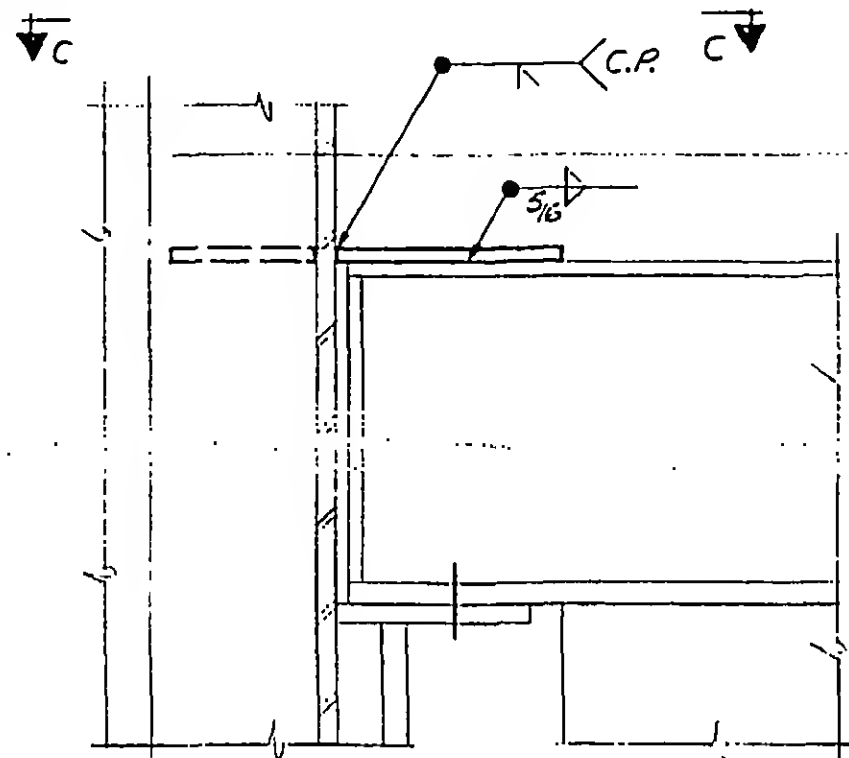
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAILS 150-158, 162, 164-169, 163A, B

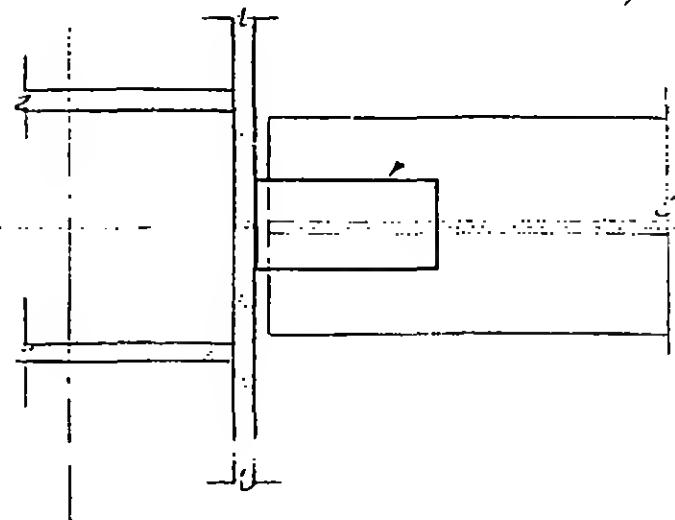
DATE 2-7-69

REVISIONS

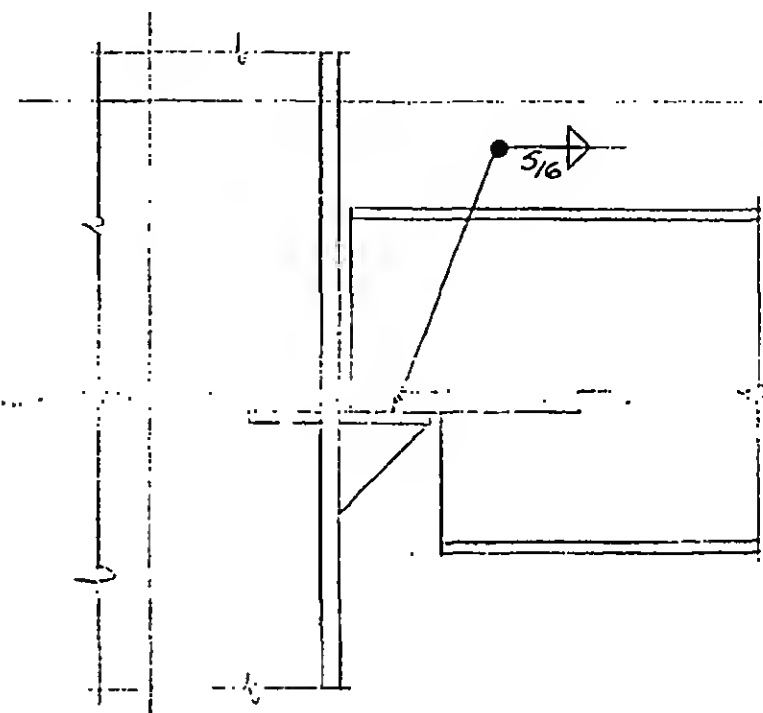


150-158, 162, 164-169

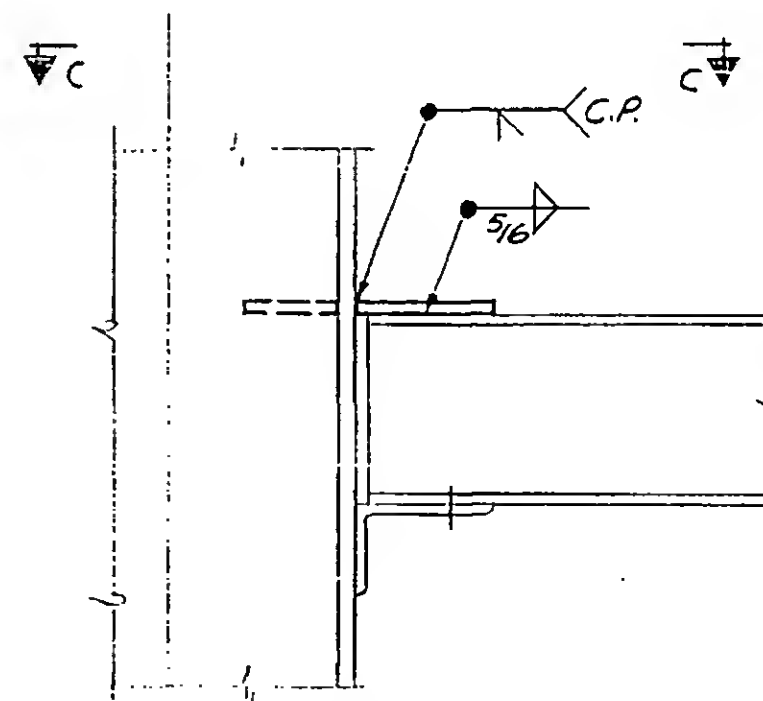
Field installed R,
R 5 x 3/8 x 1'-0" for 164, 164A, 165
R 6 x 3/8 x 1'-0" for all others.



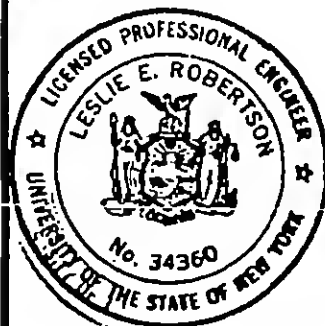
Plan C-C



163A



163B



S. Karp

J. Adams

W. Brewer

18-ABA-G.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

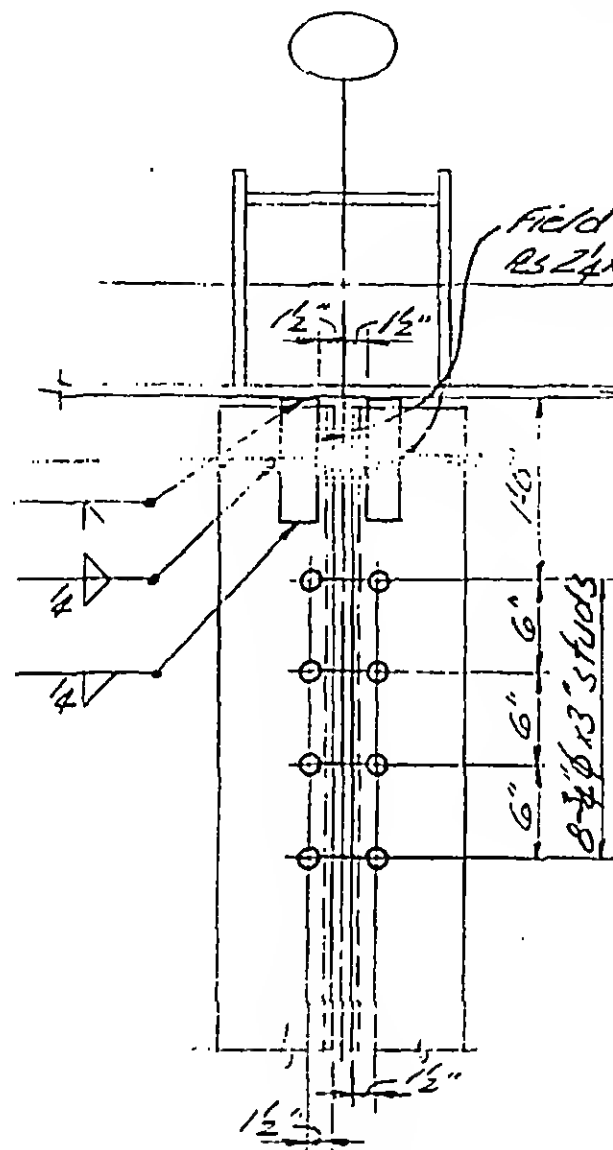
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

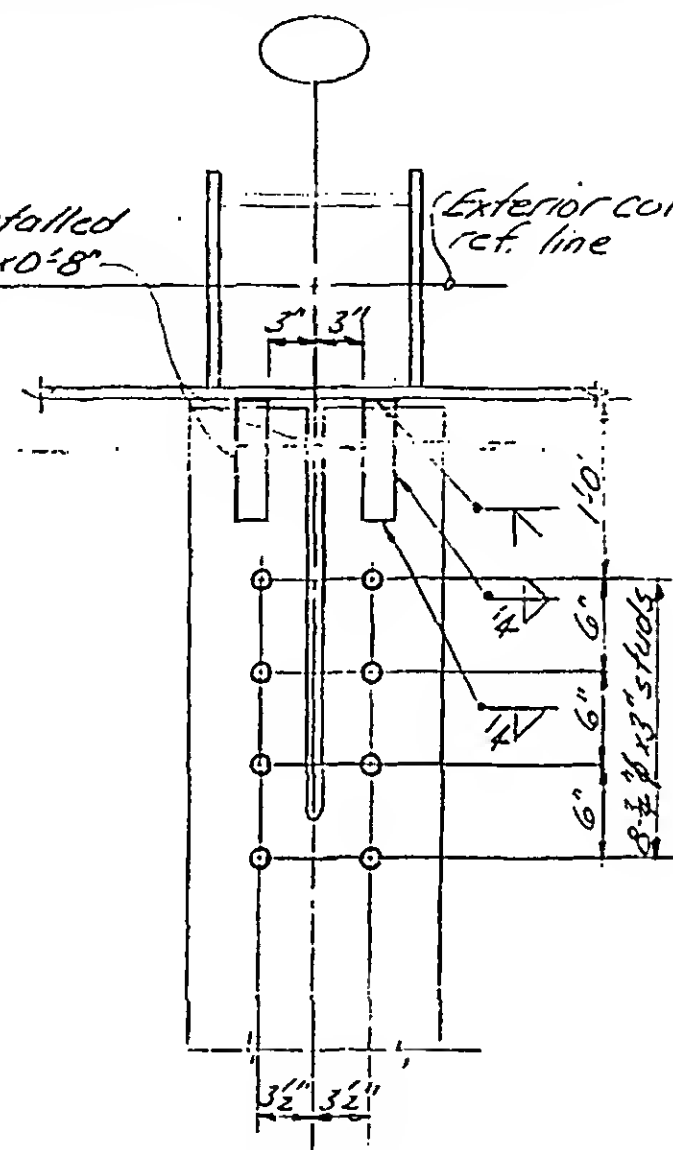
TITLE DETAILS 8.4, 8.10 & 8.X

DATE 11/7/69

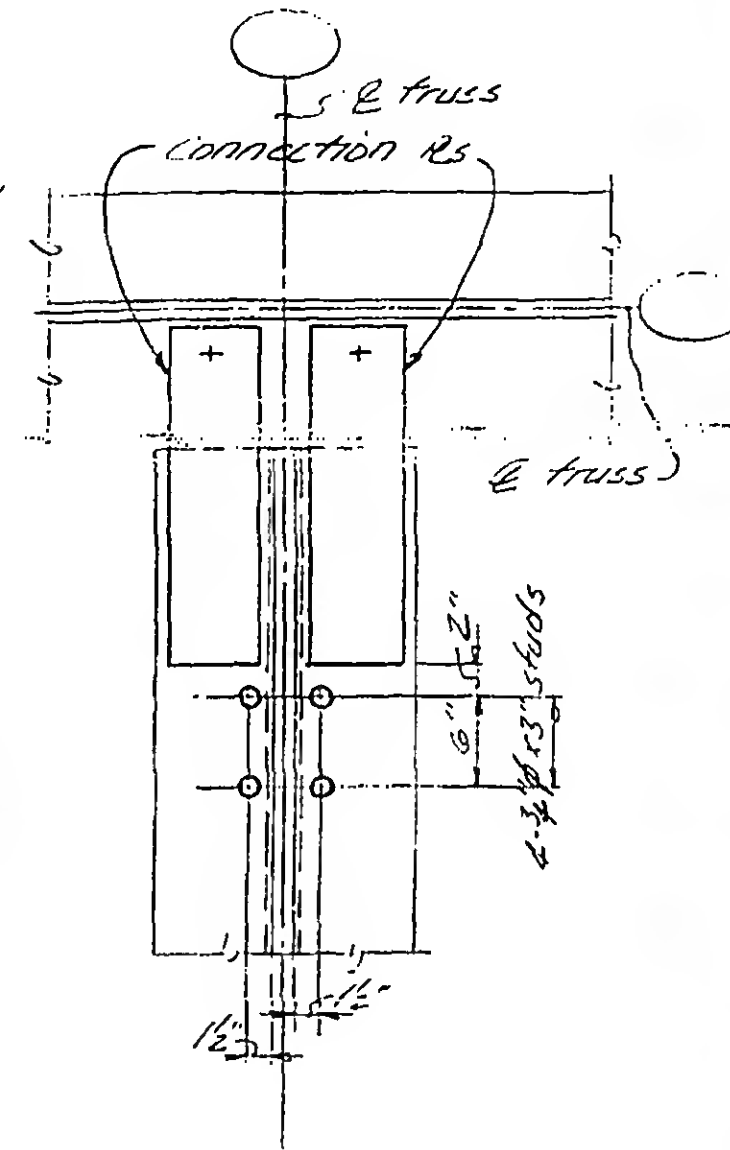
REVISIONS



Detail 8.4



Detail 8.10



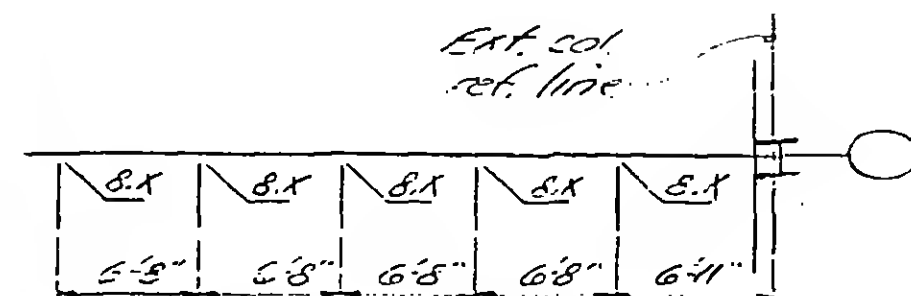
Detail 8.X



DESIGNED

DRAWN

REVIEWED



Key Plan Detail 8.X

See 18-A83-4.3, 4.4 & 4.5 for locations

18-A84-7.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

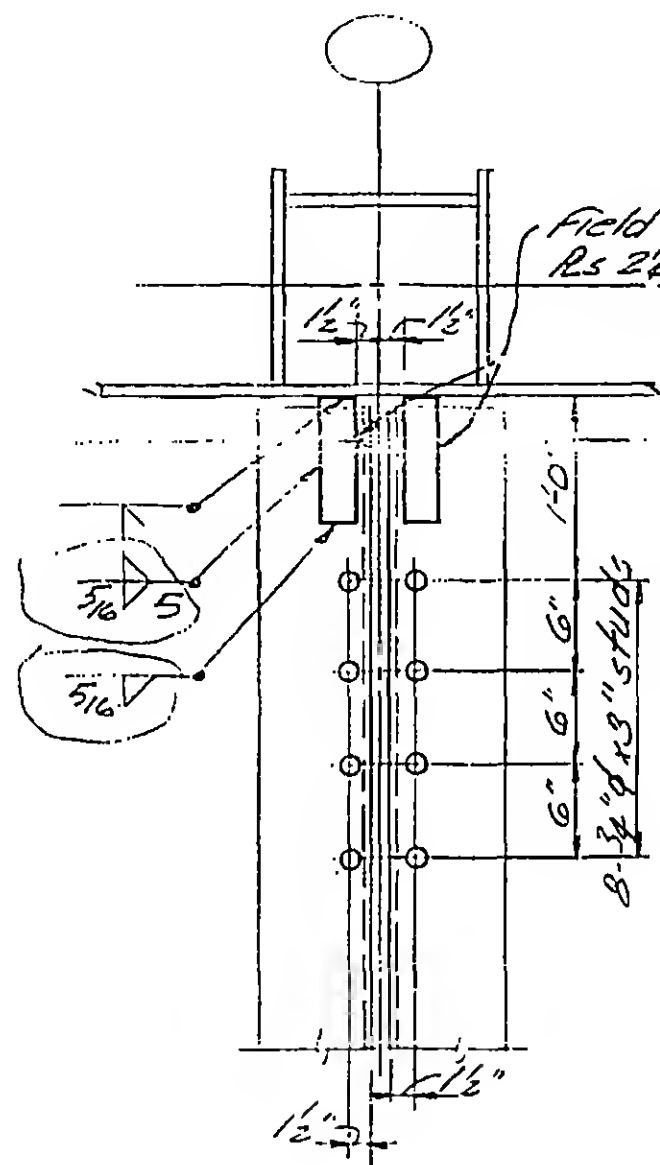
PROJECT THE WORLD TRADE CENTER

TITLE DETAILS 10.1A, 10.1B & 10.1C

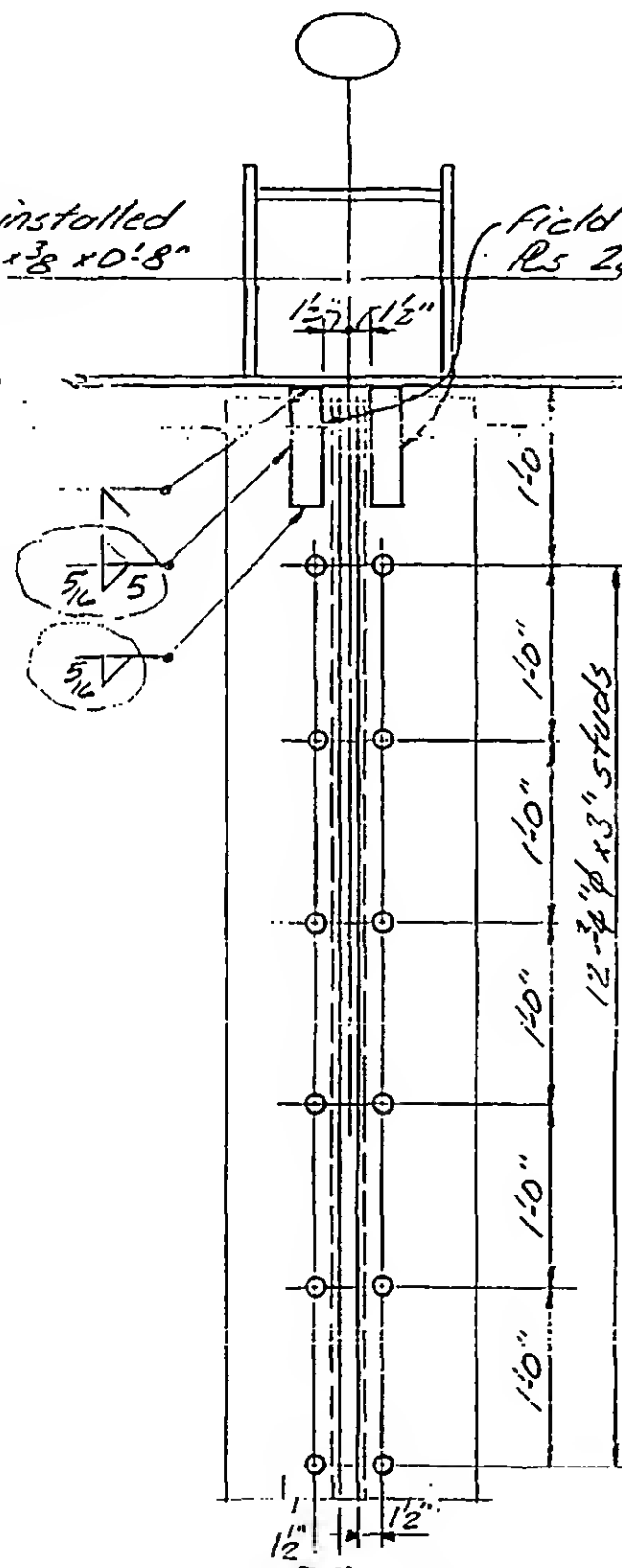
DATE 11/7/69

REVISIONS

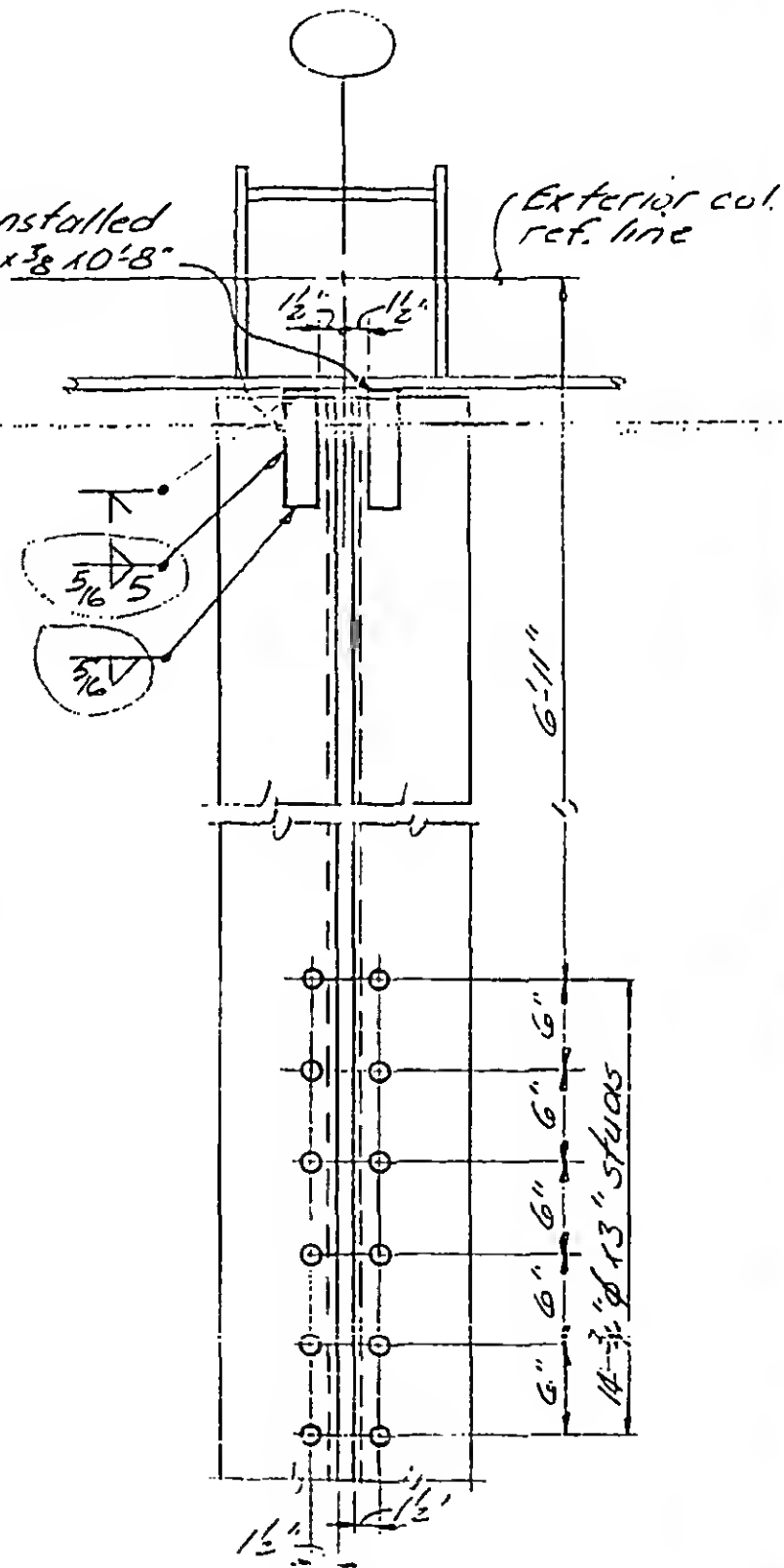
12/3/69



Detail 10.1A



Detail 10.1B



Detail 10.1C



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DRAWN

W. Brewer

18-AB4-7.2

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Structural & Civil Engineers

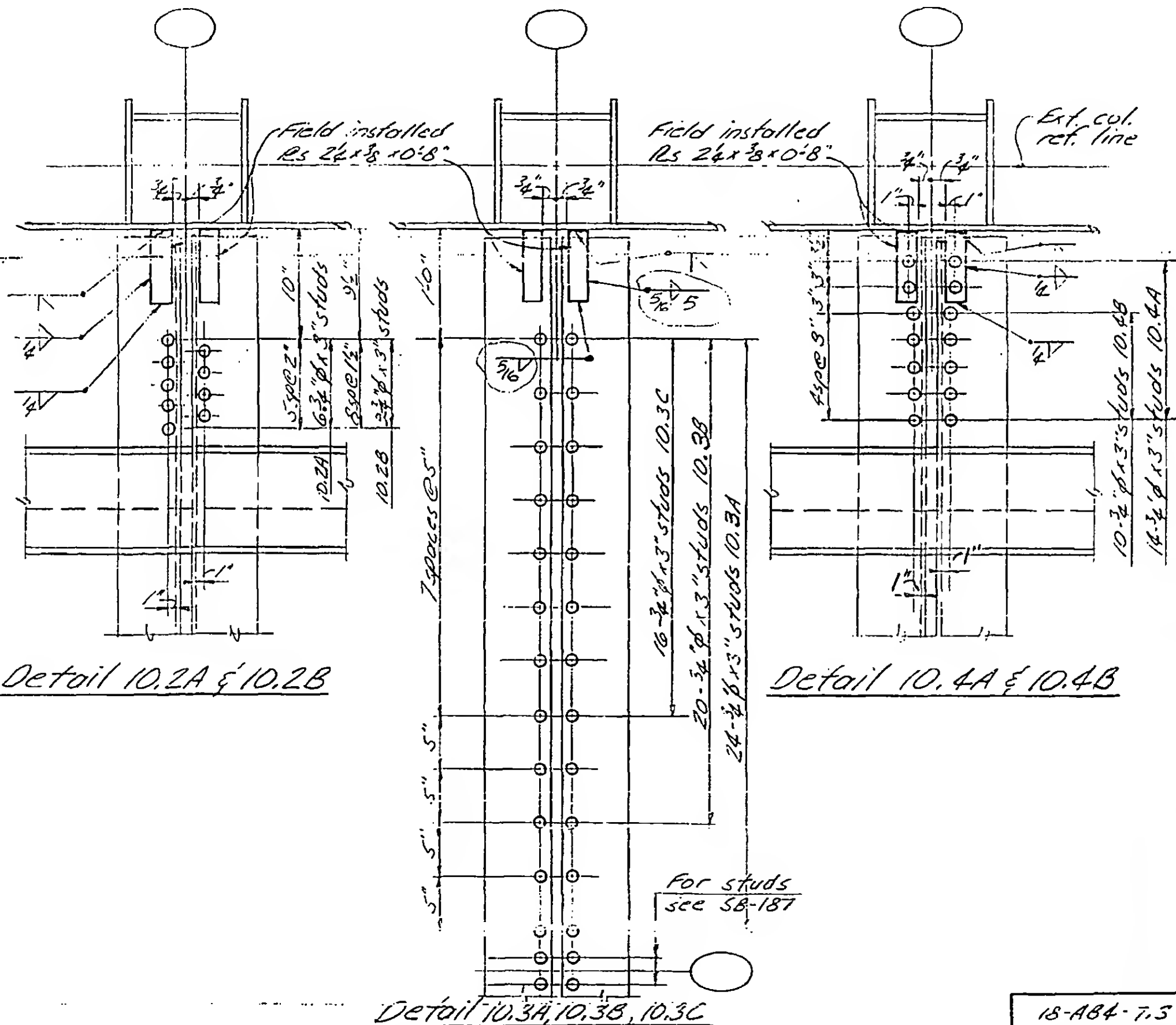
PROJECT 111E WORLD TRADE CENTER

TITLE DETAILS 10.2A & 10.2B, 10.3A, 10.3B, 10.3C, 10.4A & 10.4B

DATE 11-7-69

REVISIONS

12/3/69



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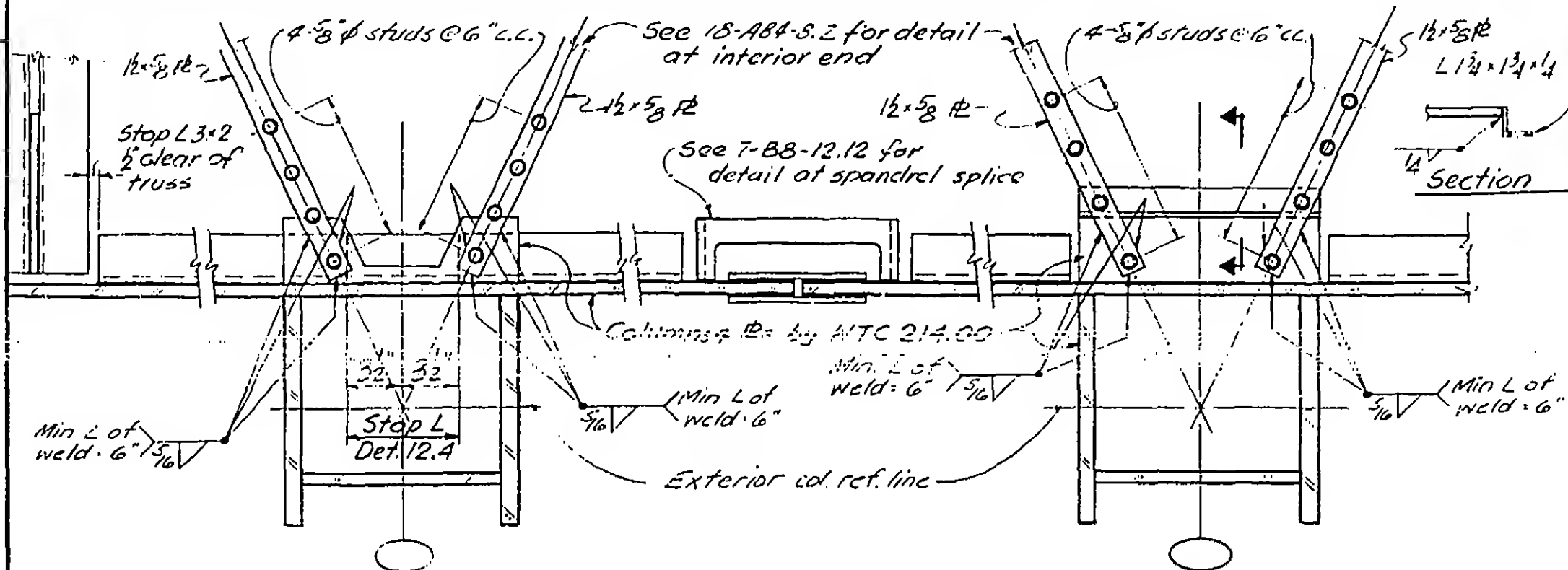
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAILS 12.1 - 12.5, 12.9 & 12.10

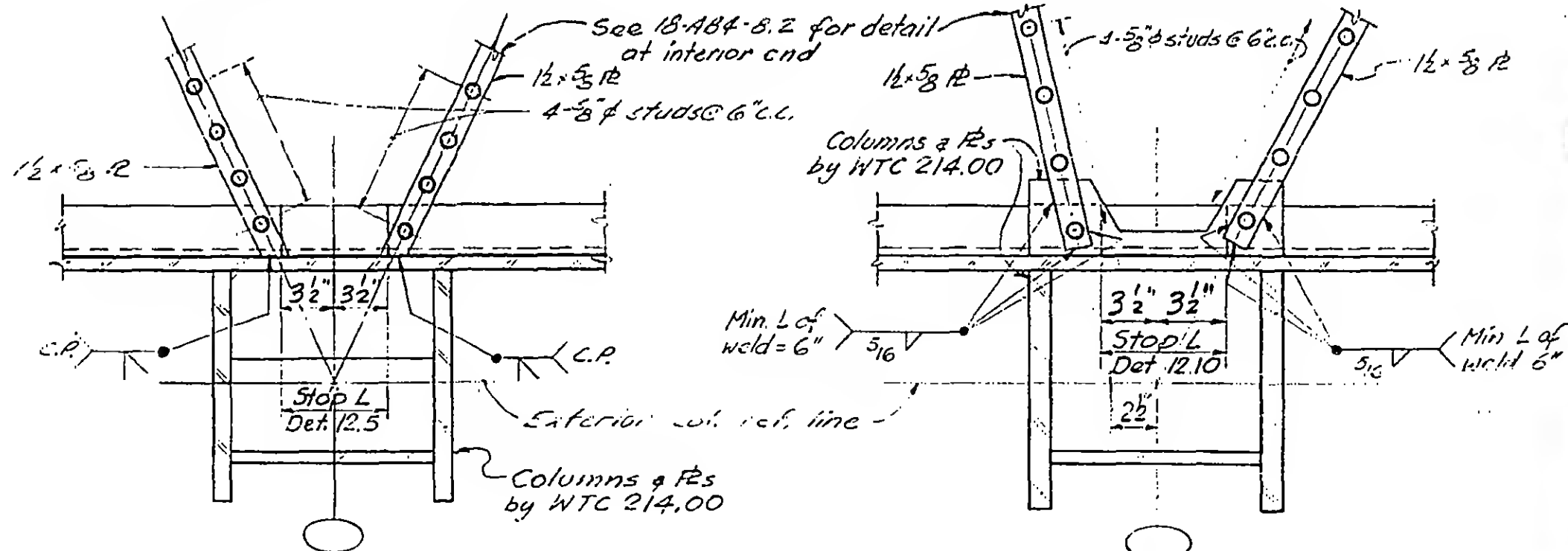
DATE 11/7/69

REVISIONS



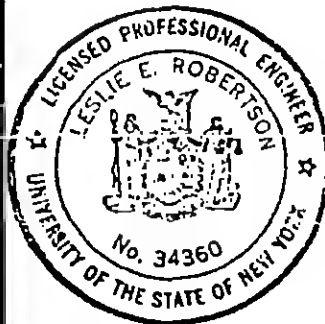
DETAIL 12.1 & 12.4

DETAIL 12.2



DETAIL 12.3 & 12.5

DETAIL 12.9 & 12.10



DESIGNED

DRAWN

J. Adams

REVIEWED

L. J. Brewer

15-AB4-8.1

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Structural & Civil Engineers

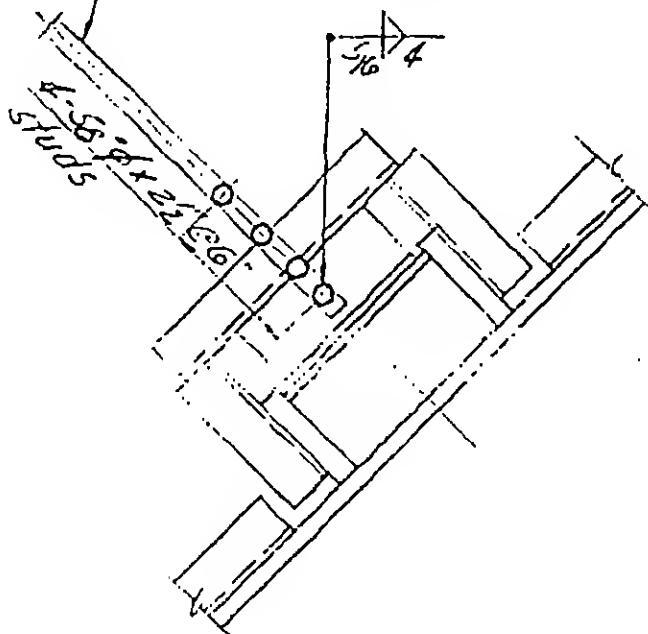
PROJECT THE WORLD TRADE CENTER

TITLE DETAILS 12.6, 12.7 & 12.8

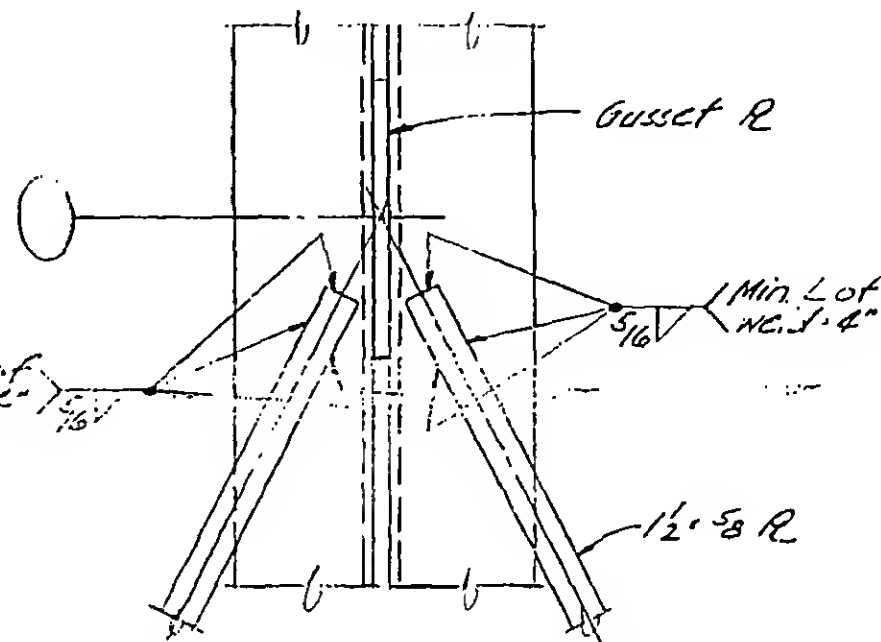
DATE 11/7/69

REVISIONS

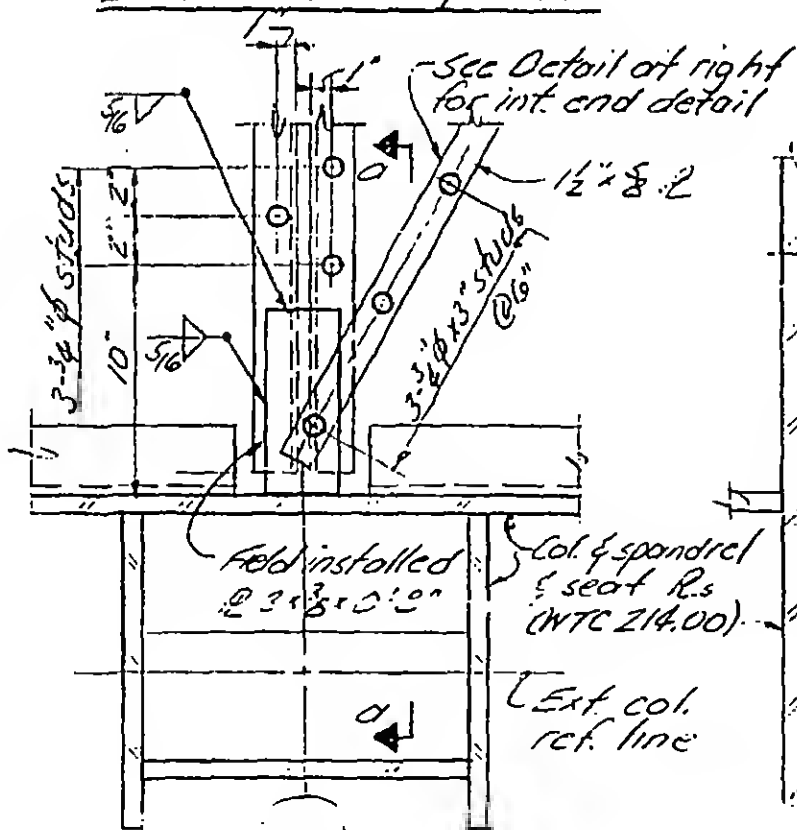
See Detail at right for
interior end detail



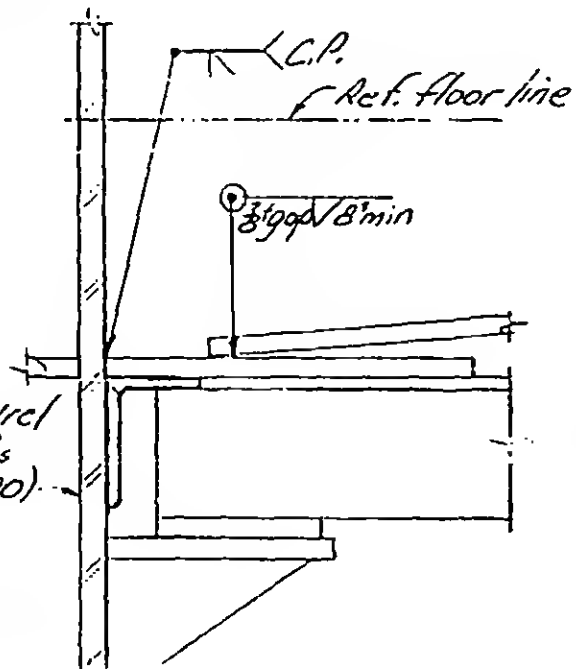
Detail 12.6 & 12.7



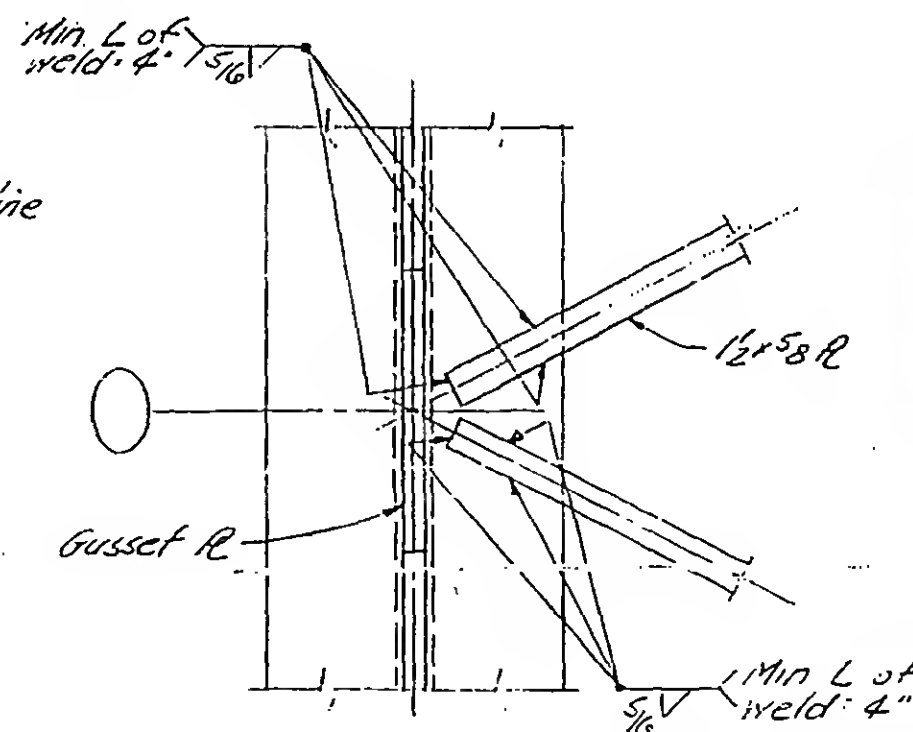
Interior Detail Parallel to Truss



Detail 12.8



Section a-a

Interior Detail Perpendicular
to Truss

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REVIEWED

18-AB4-B.2

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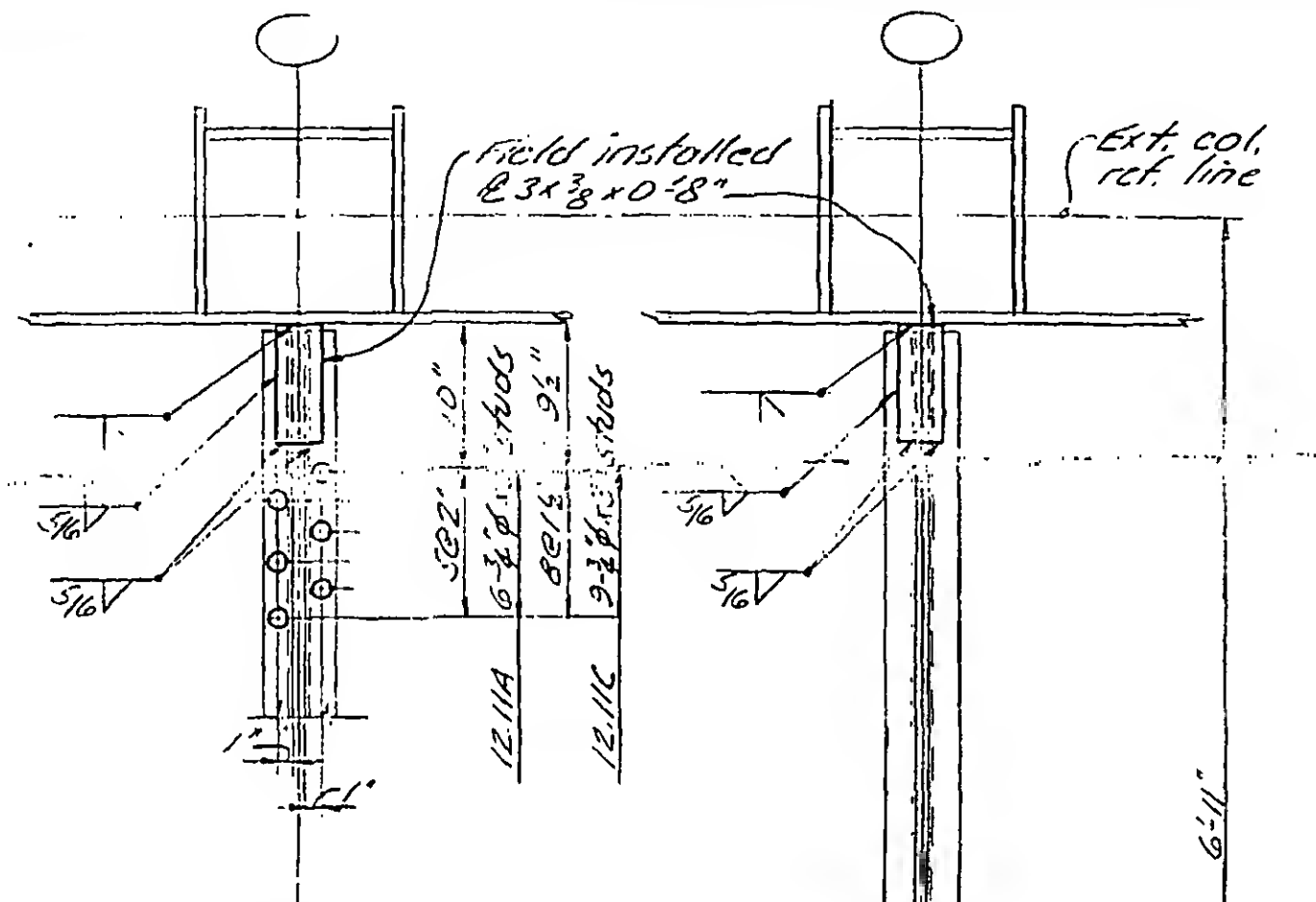
Structural & Civil Engineers

PROJECT *THE WORLD TRADE CENTER*

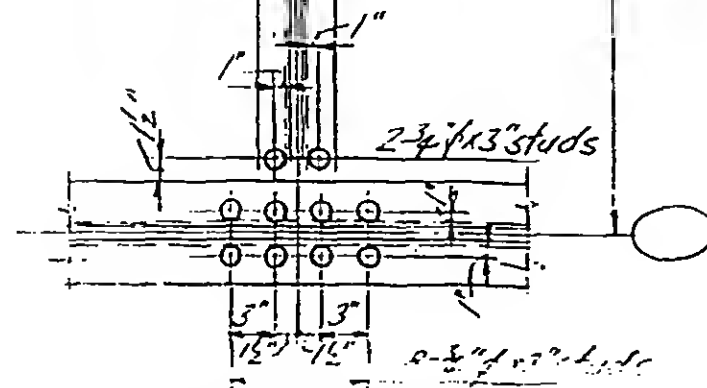
TITLE *DETAIL 12.11A, 12.11B & 12.11C*

DATE *11/7/69*

REVISIONS



Detail 12.11A & 12.11C



Detail 12.11B



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18-AB4-B.3

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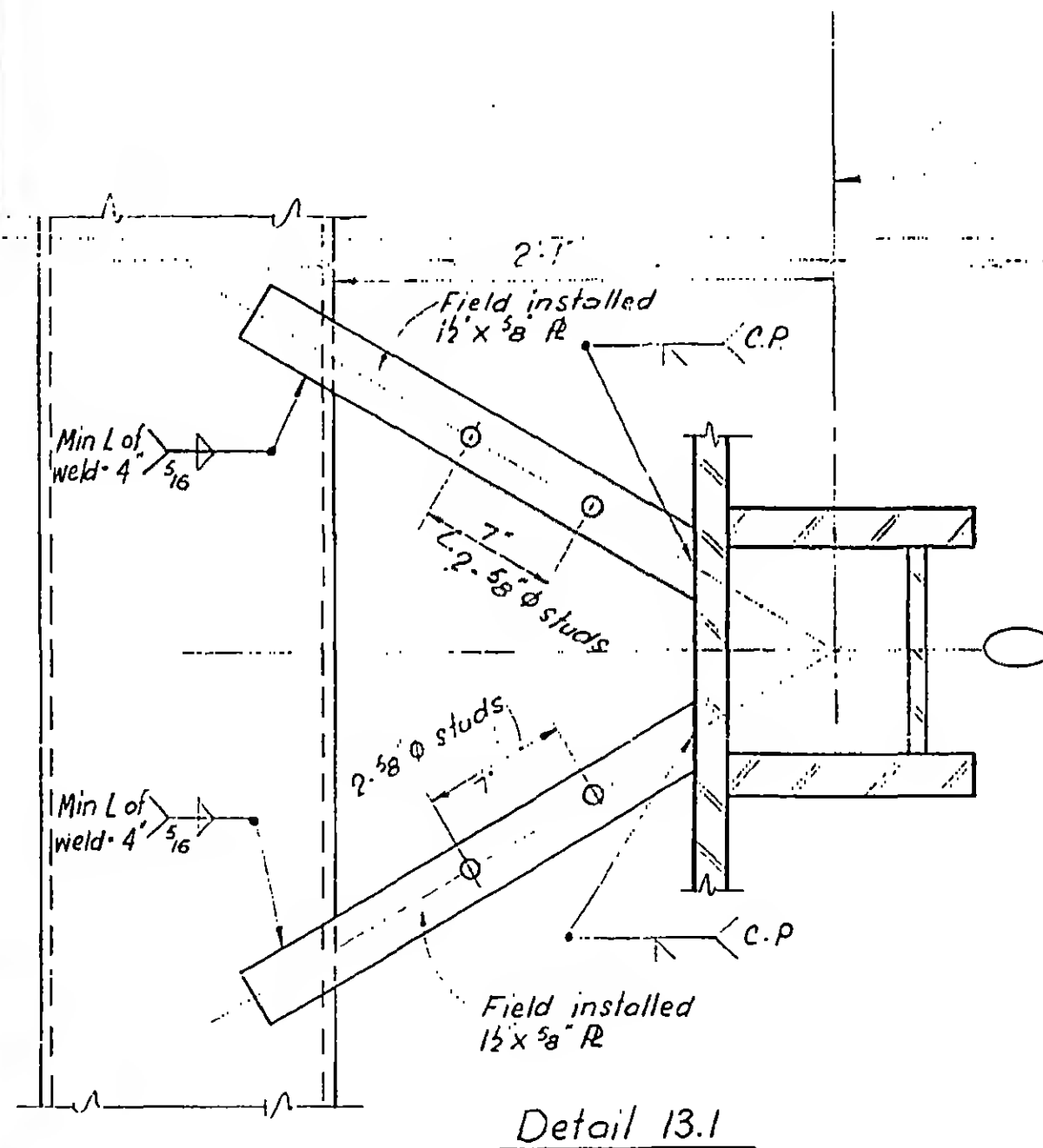
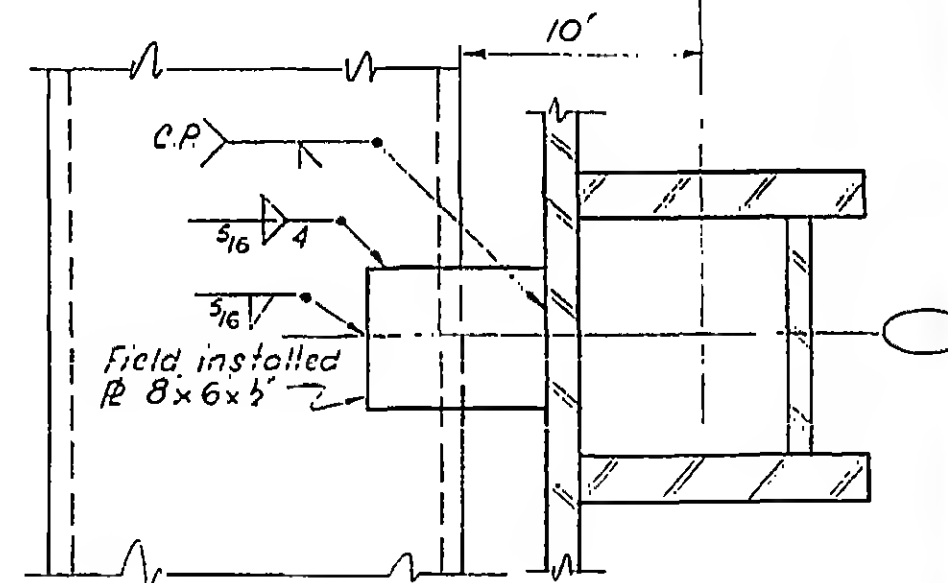
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAILS 13.1, 13.2, 13.3

DATE 11-7-69

REVISIONS

Exterior column
reference line.

DESIGNED

W. Stewer

DRAWN

T Terrelonge

REVIEWED

18-AB4-9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

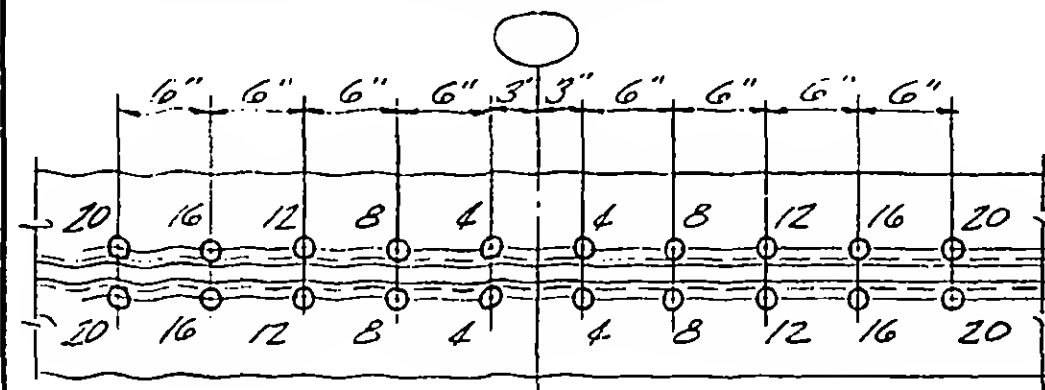
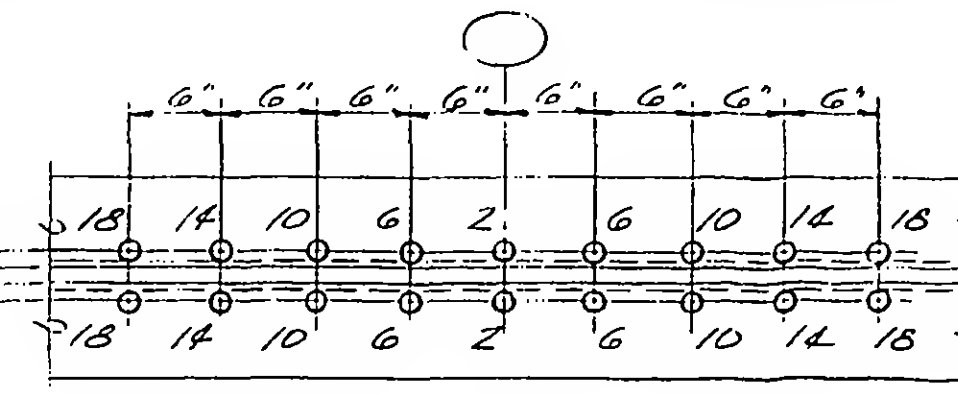
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PROJECT THE WORLD TRADE CENTER

TITLE STUD ARRANGEMENT A & D

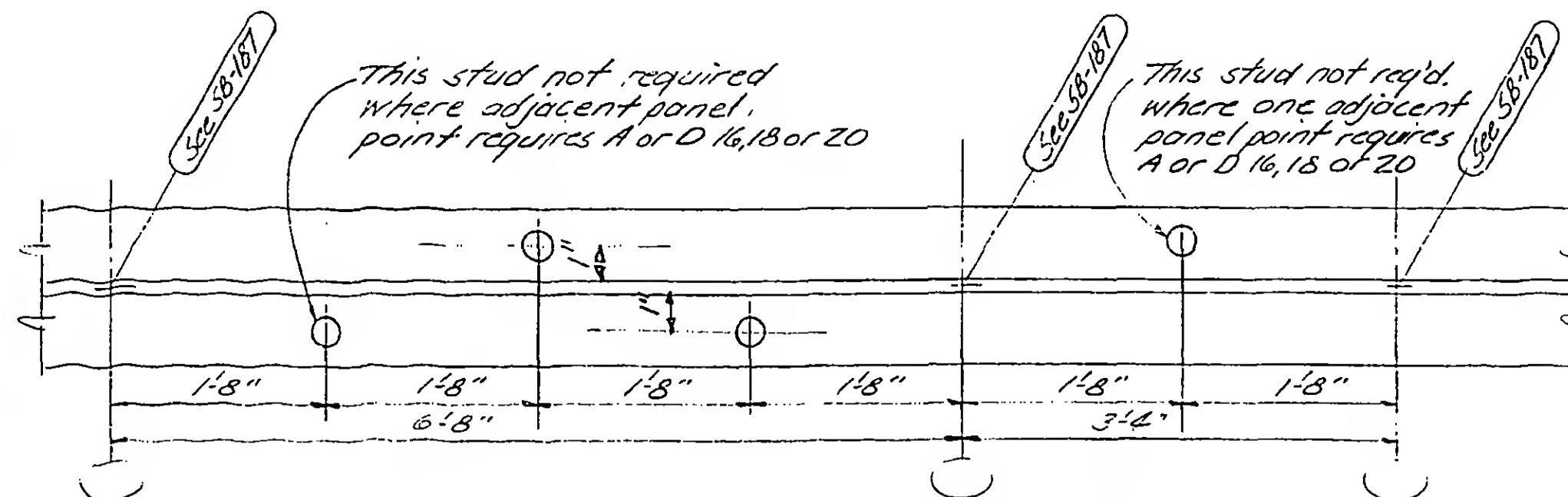
DATE 11/7/69

REVISIONS

Arrangement A 4, 8, 12, 16, 20Arrangement D 4, 8, 12, 16, 20Arrangement A 2, 6, 10, 14, 18

Notes:

1. All studs shall be $\frac{3}{4}$ " ϕ x 3" long headed studs unless otherwise noted.
2. For shear stud requirement at top panel points see Dwg. SB-187.
Example (A10) indicates 10 studs located as shown in Arrangement A. Shear studs shall be placed at each location identified in the applicable arrangement by a number equal to or smaller than the number of studs required.

Typical Arrangement Between Panel Points

DESIGNED

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18-AB4-10.1

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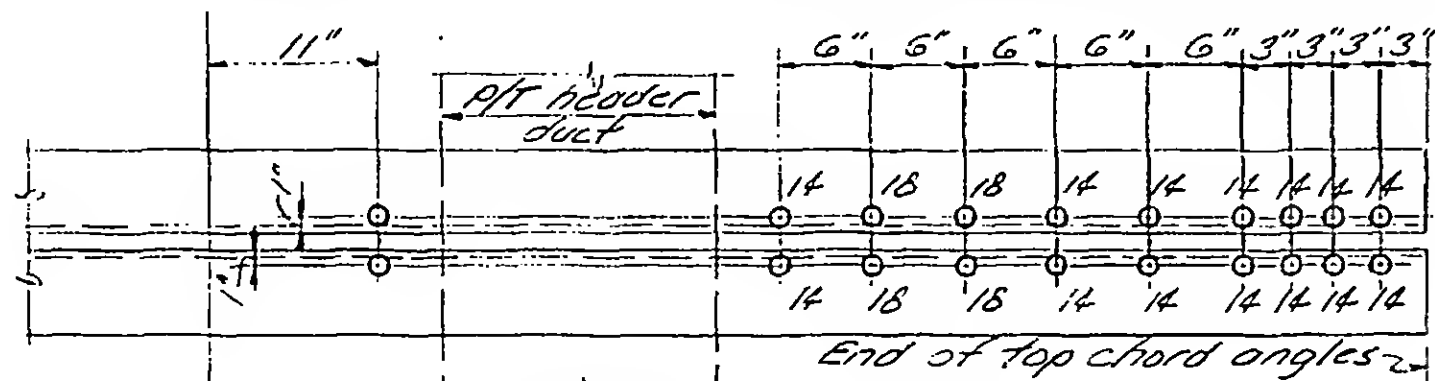
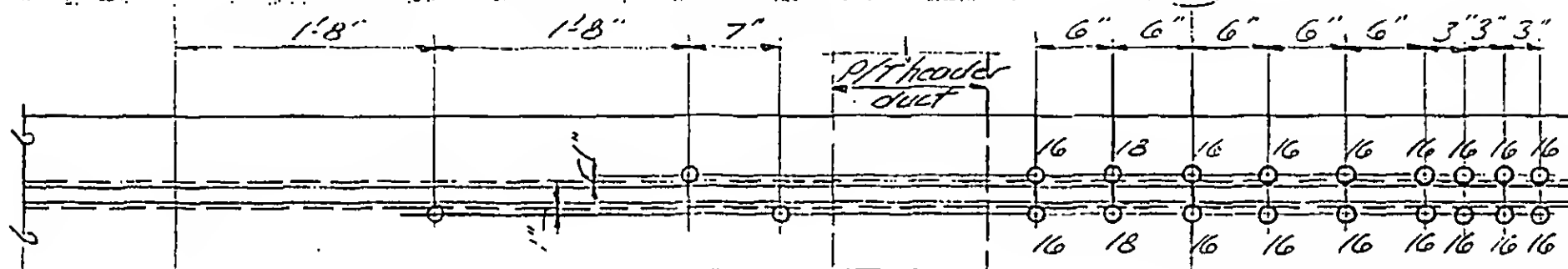
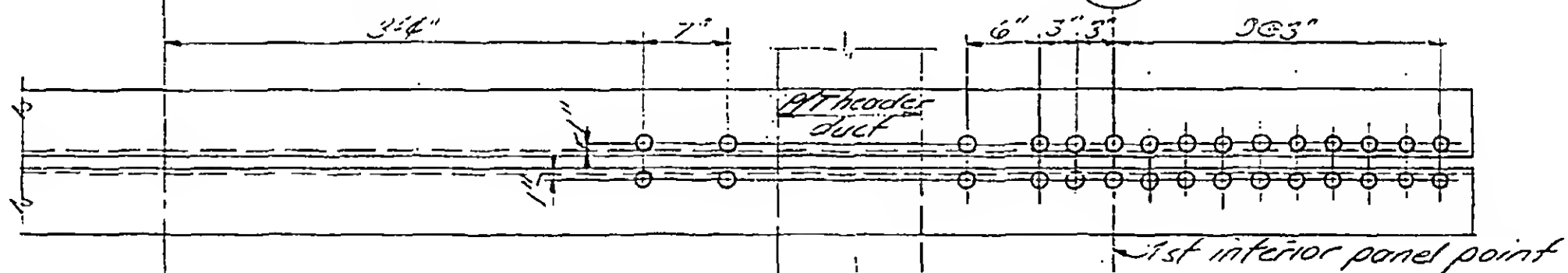
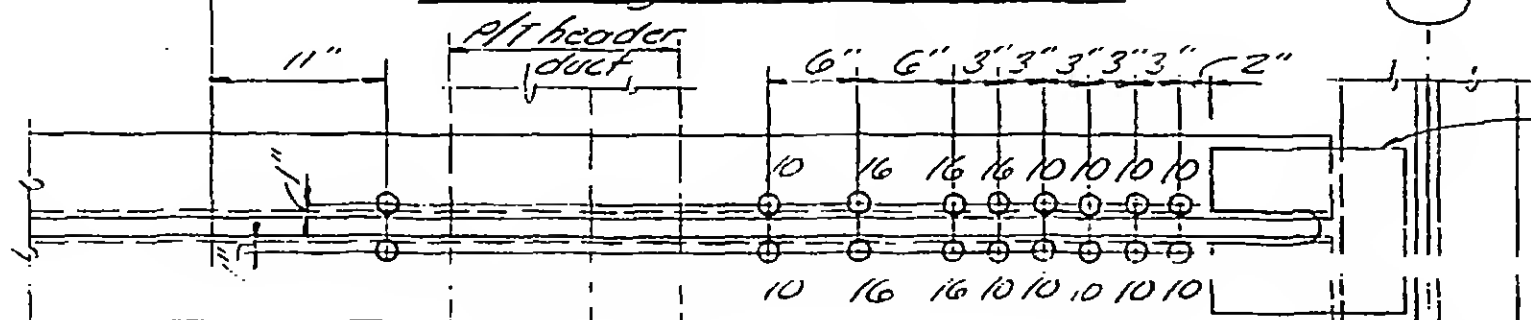
TITLE

STUD ARRANGEMENT B, C, E & F

DATE

11/7/69

REVISIONS

Arrangement B 14 & 18Arrangement C 16, 18Arrangement E 26Arrangement F 10 & 16

For notes
see 18-AB4-10.1

18-AB4-10.2



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DRAWN

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PROJECT THE WORLD TRADE CENTER

TITLE DRAWING 800K 20-STRUCTURAL STEEL-INDEX, DATES

DATE 11/26/71

REVISIONS

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|------------|-------------------|----------|
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| 20-AB- 0.1 | GEN. NOTES | 10/ 9/68 |
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| 20-A - 2 | DETAIL 2 | 11/20/68 |
| 20-AB- 3 | DETAIL 3 | 10/ 9/68 |
| 20-AB- 4 | DETAIL 4 | 11/20/68 |
| 20-AB- 5 | DETAIL 5 | 11/20/68 |
| 20-AB- 6 | DETAIL 6 | 10/ 9/68 |
| 20-AB- 7 | DETAIL 7 | 11/20/68 |
| 20-AB- 8 | DETAIL 8 | 11/20/68 |
| 20-AB- 8.1 | DETAIL 8 | 10/ 9/68 |
| 20-A - 9 | DETAIL 9 | 10/ 9/68 |
| 20-AB-10 | DETAIL 10 | 6/24/69 |
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| 20-B -12 | DETAIL 12 | 10/ 9/68 |
| 20-AB-13 | DETAIL 13 | 10/ 9/68 |
| 20-AB-14 | DETAIL 14 | 10/ 9/68 |
| 20-AB-15 | DETAIL 15 | 3/12/71 |
| 20-AB-16 | CONN DETAILS | 10/ 9/68 |
| 20-A -20 | DETAIL 20 | 3/21/69 |
| 20-B -21 | DETAIL 21 | 3/21/69 |
| 20-AB-50 | DETAIL 50 | 10/ 9/68 |
| 20-A -51 | DETAIL 51 | 10/ 9/68 |
| 20-AB-53 | DETAIL 53 | 10/ 9/68 |
| 20-A -54 | DETAIL 54 | 10/ 9/68 |
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| 20-A -60 | DETAIL 60 | 10/ 9/68 |
| 20-A -61 | DETAIL 61 | 10/ 9/68 |
| 20-A -62 | DETAIL 62 | 10/ 9/68 |
| 20-A -63 | DETAIL 63 | 10/ 9/68 |
| 20-AB-64 | DETAIL 64 | 6/24/69 |
| 20-A -65 | DETAIL 65 | 3/21/69 |
| 20-A -66 | DETAIL 66 | 10/ 9/68 |
| 20-AB-67 | DETAIL 67 | 11/27/68 |
| 20-AB-68 | DETAIL 68 | 11/27/68 |
| 20-A -69 | DETAIL 69 | 10/ 9/68 |
| 20-B -70 | DETAIL 70 | 11/27/68 |
| 20-B -71 | DETAIL 71 | 3/21/69 |
| 20-AB-72 | DETAIL 72 | 11/22/68 |
| 20-A -73 | DETAIL 73 | 4/ 9/69 |
| 20-AB-75 | DETAIL 75 | 8/19/69 |



2C-AB-C

WTC-1044-L, 2